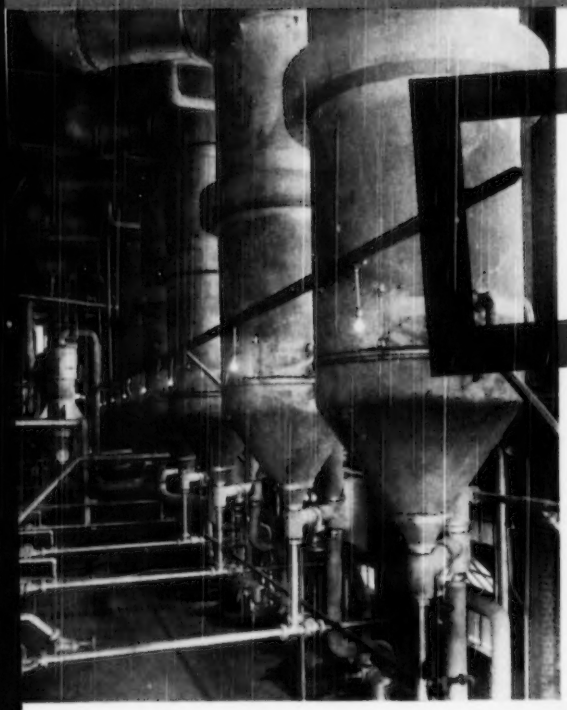
Paper
TRADE JOURNAL

AUGUST 31, 1950

HOW CAN THE AMOUNT OF SHIVES IN MECHANICAL PULP BE DETERMINED?

CAN YOUR CUTTING OPERATIONS BE IMPROVED?

INDEX TO FEATURE ARTICLES



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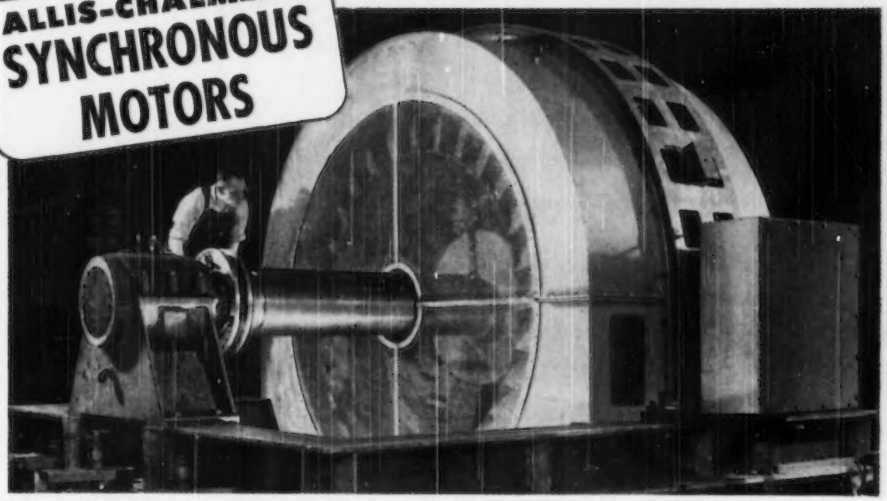

New Coosa River Newsprint mill uses five 3,500 hp, 11,200 volt, 257 rpm Allis-Chalmers motors for steady grinding power.

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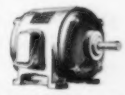

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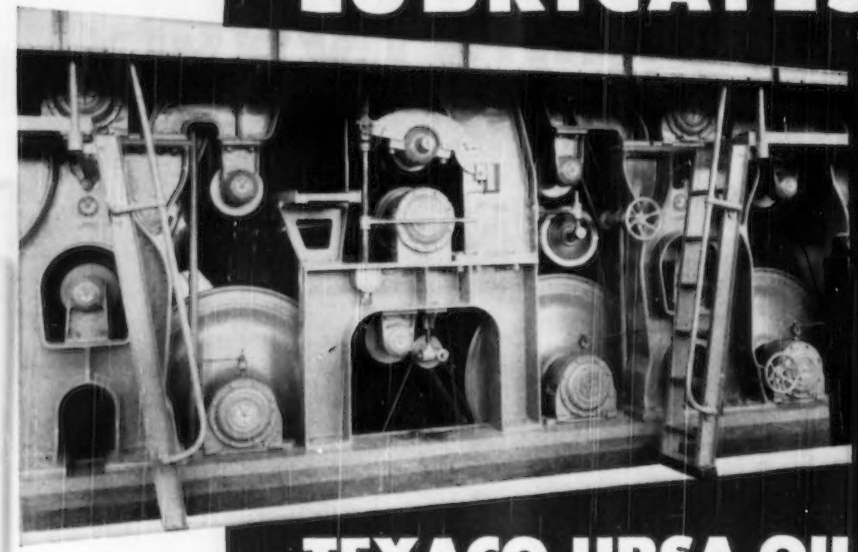

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FOR THE PAPER INDUSTRY

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Industrial Editor

Paper TRADE JOURNAL

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FEATURES

	Page
Westvaco's #5 Machine in Operation	11
Newsprint Production in Japan	12
Wet Strength Papers—What They Are and Why They Are Objectionable as Wastepaper	13
Index, Feature Articles, Paper Trade Journal Volume 130 January 5, 1950 to June 29, 1950	14
Rotary Screen for Laboratory Separation of Shives From Mechanically Prepared Wood Pulp	21
Taylor, Stiles & Co.—Cutting Machine Specialists to the Paper Industry	24
Technical Knowledge Is Not Enough	26

DEPARTMENTS

Our Business	7	New Literature	35
Trends	9	Shop Hints	36
News of the Week	11	New Process	36
Industrial Section	21	New Paper Uses	36
Patent Abstracts	28	New Products	36
Suppliers	31	Associations	36
Financial Page	32	Production Ratio Report	38
Prices	33	Classified Advertising	41
Materials	34	Index to Advertisers	50
Imports	34		

DATES TO REMEMBER

SEPTEMBER 5-9: Sixth National Chemical Exposition, Chicago Section, American Chemical Society, Chicago Coliseum, Chicago, Ill.

SEPTEMBER 11-23: 6th Educational Graphic Arts Exposition, International Amphitheatre, Chicago, Ill.

SEPTEMBER 14-16: Southern Paper Trade Assn., Sheraton Plaza Hotel, Daytona Beach, Florida.

SEPTEMBER 14-17: American Pulp & Paper Mills Supts. (New York-Canadian Div.) Convention, Chateau Laurier Hotel, Ottawa, Ont., Canada.

OCTOBER 2-5: Fifth Engineering Conference of the Pulp and Paper Industry, Netherland Plaza Hotel, Cincinnati, Ohio.

OCTOBER 11-13: Fifth Annual Symposium on "Instrumentation for the Process Industries," Agricultural and Mechanical College of Texas, College Station, Texas.

OCTOBER 12-14: American Pulp & Paper Mills Supts. (Southern and Southeastern Div.) Annual Meeting, George Vanderbilt Hotel, Asheville, N. C.

OCTOBER 16-20: 38th Safety Congress and Exposition, Chicago, Ill.

OCTOBER 23-25: National Paper Trade Assn., Fall Convention, Stevens Hotel, Chicago, Ill.

OCTOBER 30-31 NOVEMBER 1: 37th National Foreign Trade Convention, The Waldorf-Astoria, New York, N. Y.

NOVEMBER 27:—DECEMBER 2: 19th National Exposition of Power and Mechanical Engineering, Grand Central Palace, N. Y.

DECEMBER 3-6: American Institute of Chemical Engineers, Annual Meeting, Neal House, Columbus, Ohio.

THIS WEEK

An interesting description of one of the oldest organizations supplying equipment to the paper industry—"Taylor Stiles & Co. Cutting Machine Specialists to the Paper Industry."

Details of the construction and operation of a special screen which should prove extremely useful in evaluation of coarse, semi-chemical or groundwood pulps is contained in "Rotary Screen for Laboratory Separation of Shives from Mechanically Prepared Wood Pulp" by H. W. Greider, R. A. MacArthur and L. C. Gischig.

A thought-provoking challenge which points out our failure to keep pace socially, economically and morally with our technical progress is contained in "Technical Knowledge Is Not Enough" by James D. Cunningham.

NEXT WEEK

ANNUAL MILL AND MILL EQUIPMENT NUMBER

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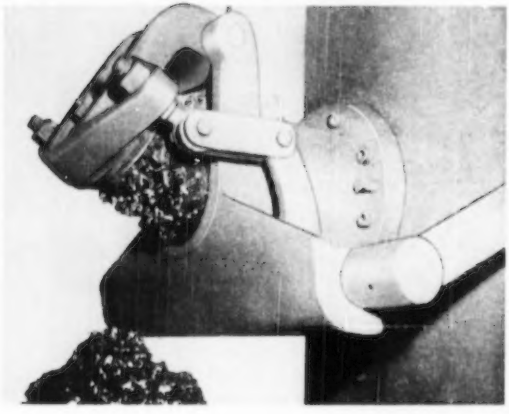

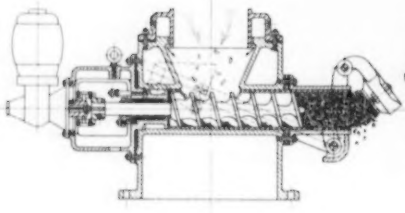

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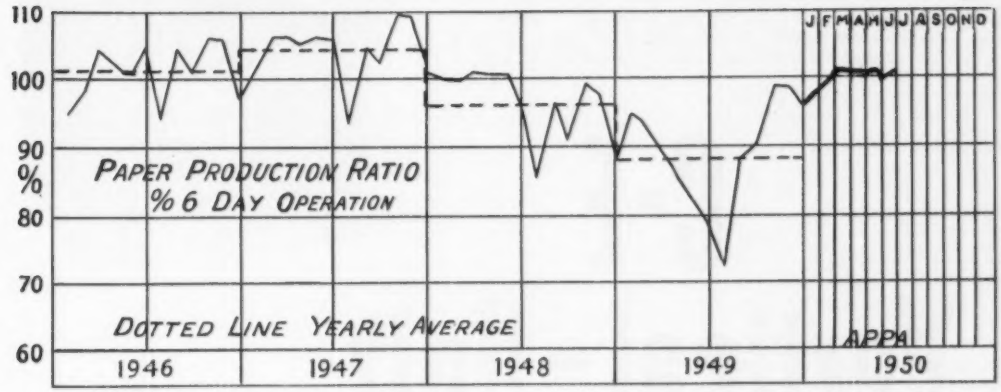
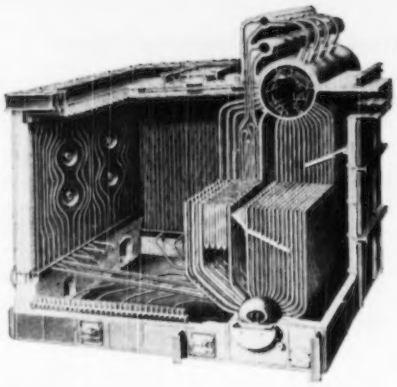


Source	Production	WEEK ENDING Aug. 19, '50	July 22, '50	Aug. 20, '49
APPA	Paper Production percent 6-day Capacity	105.7	102.5	89.3
	Unbl. Kraft Paper Production percent	99.0	95.4	74.9
NPA	Paperboard Operating Ratio percent inch hours	101.0	95.0	87.0
		June 1950	**May 1950**	**June 1949**
APPA	Paper Production* (Except Newsprint and Building Papers) ....Tons	788,500	842,500	631,906
	New Orders ....Tons	812,800	836,000	637,622
	Unfilled Orders ....Tons	565,565	835,065	343,370
	Shipments ....Tons	786,300	842,000	626,312
		July 1950	**June 1950**	**July 1949**
NPA	Paperboard Production ....Tons	745,255	846,030	583,800
	New Orders ....Tons	890,890	855,016	618,100
	Unfilled Orders ....Tons	524,391	394,110	268,500
	Our Customers Activities Index[1]	**Latest Mo.°**	**Previous Mo.°**	**Year Ago***
FRS	Manufactures Total Index	209	203	176
	Durable Mfg. Index	238	232	195
	Nondurable Mfg. Index	184	180	161
	Chemical Products Index	259	255	230
	Mfg. Food Products Index	164	157	165
	Printing and Publishing Index	169	169	148
ODC	Magazine Advg.-Printer's Ink Index	321	324	314
	Retail Sales Combined Adjusted Index	316.2	313.0	300.9
	Drug Index	215.4	215.9	225.3
	General Merchandise Group Index	306.6	300.5	293.1
	Grocery and Combination Index	379.2	379.1	358.1
	Prices Index			
BLS	Consumers Price Index[1]	170.2	168.6	169.6
	Wholesale all Commodities[2]	157.3	155.9	154.5
	Wholesale Foods[2]	162.1	159.9	162.4
	Commodities other than Farm Products and Foods[2]	148.8	147.6	145.5
	Wholesale Pulp and Paper[2]	155.4	155.4	159.6
	Purchasing Power of Dollar, Consumers Prices[1]	58.8	59.3	59.0
	General Activity Index			
FRS	Mfg. Production-Worker Payroll	349.0	337.2	312.8
	Unemployment Compensation Initial Claims (M)	1,104	1,367	1,522
	Miscellaneous Carloadings–Thousands of Cars	1,846	1,424	1,637
	Electric Output (Million KW hr.)	31,608	31,486	28,025
PTJ	Average 32 P & P Common Stocks as of August 22	$32.04	$29.82	$26.59
	Average Indicated Dividends Common Stocks as of August 22	$ 2.32	$ 2.32	$ 2.31

[1] 1935-39=100 Unadjusted Index
[2] 1926=100
° For details see APPA Monthly Statistical Summary—June 1950 Estimated Figures
* Latest Month Available on Request

C-E Vertical-Unit Boiler, Type VU-50

The Unit shown at the right is but one of a family designed to serve virtually every industrial requirement from about 10,000 to 300,000 (or more) lb of steam per hour, pressures up to 1000 psi and steam temperatures to 900 F. There are Vertical-Unit Boilers suitable for all methods of firing, including pulverized coal, all types of stokers, oil, gas, or refuse fuels.



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C-E Vertical-Unit Boilers represent truly modern standards of design. To an exceptional degree they incorporate all the important advances in steam generation made in the past twenty-five years . . . advances that have resulted in substantially increased efficiencies and lower operating costs. At today's high costs of fuel and labor, these gains in operating efficiency may well prove the difference that will make replacement a profitable procedure for you. Whether you have under consideration the purchase of equipment for replacement or expansion, or for a new plant, a C-E Vertical-Unit Boiler will provide the right answer to your particular situation.

The unit illustrated above – and others in the Vertical-Unit line not shown are collectively designed to serve virtually every industrial requirement from about 10,000 to 300,000 (or more) lb of steam per hour, pressure up to 1,000 psi and steam temperatures to 900 F. The entire Vertical-Unit line offers the advantages of time-tested standards of design coupled with that flexibility of application – fuels, firing methods, operating conditions, etc. – required to meet particular plant needs. We shall be pleased to supply catalogs and any additional information required upon request.

B-371-B

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Paper TRADE JOURNAL

TRENDS

Office of the PAPER TRADE JOURNAL,
Wednesday, August 30, 1950.

Psychologists have it that no one reaches intellectual maturity without winning his private Waterloo — that time when there is nothing left to go wrong. The decision to stay and conquer obstacles rather than go off fishing sends us exploring unknown paths and develops unsuspected capacities. Which is to say, when the Gremlins get in your hair, initiative beckons.

As the Summer lengthens, it appears that a *horde* of Gremlins have migrated into the pulp, paper and board industries. From the Weyerhaeuser strike, to panic buying, to shortages of pulp, waste paper and cottons, higher costs of everything, shortages of chlorine, soda ash, caustic, titanium, casein, too few box cars, particularly at West Coast pulp mills; and NOW, at press time, the Canadian railroad strike which has cut off the major portion of Canadian pulp shipments to U.S. mills: these are times "which try men's souls" and their ingenuity.

Already 10 days to two weeks behind in deliveries, Canadian mills are threatened with a complete shutdown unless their output can be moved along the rails. The situation is grave for Canadian producers and U. S. mills alike. Much hope is being pinned on the emergency session of Parliament and its outcome.

Coming at a time when the market is clean of spot pulps and of waste paper substitutes; when mill inventories have not adjusted from the West Coast strike, and demand is at peak levels, this new emergency has made for a critical situation at many mills. Mill agents report themselves besieged with calls from consuming mills with no relief in sight.

Pulp Prices Gather Strength

The sole reports of spot sales during the week are for resales of bleached sulfites at $180 to $187.50.

The flood of huge orders for book and publication papers has cleaned up the groundwood market. Pulp prices are lifted to $70 for contract tonnages. Spot quotations are said to be $75. Indications are that the $65 contract price on U. S. grades will hold only to the close of the quarter.

Pulp Market Trends

Prices.— As September 1 rolls around, the $64 question is: What will fourth quarter prices be? There had been some industry expectation that requirements of the national mobilization program would upset the normal reaction of supply and demand. The late announcement from the Department of Commerce that expanded military needs will not cut into commercial paper schedules now makes for the conclusion that fourth-quarter prices will react to spot market strength only. There is the hope that major U. S. pulp producers will stabilize the market at a moderate level. On so strong a market, even these mills are likely to defer announcements for market developments, it is stated within the trade.

Supply and Demand.— What has been called the $65 question is: Will supply be adequate to U. S. mill demands at current capacity levels? And if not, what then?

Industry reports indicate that during the past nine months the overall supply of woodpulp for domestic consumption has been about equal to consumption requirements. Under recent boom conditions, the pulp supply has not been adequate to meet current demand for inventory building and peak level demands for consumption.

New domestic supply either coming into the market or due within the next six months include *Natchez* bleached kraft — 6,000 tons monthly — which, due to the chlorine strike at a major producing plant, currently is a papermaking grade of unbleached kraft. The entire output is understood to be sold up. Expectations are that eventually a major portion of this output will be put into dissolving grades of bleached kraft.

Also now coming to the U. S. market is a portion of the Nanaimo unbleached kraft with scheduled daily production of 200 tons. Bleaching operations will early get under way and convert the output to a top grade of bleached.

Early 1951 production of a new Canadian bleached sulfite is also planned. Output of the new mill is rated at 200 tons daily, and early runs of papermaking grades are the norm.

There also is a possibility that a sizable quantity of papermaking bleached sulfites will come in 1951 from a source not anticipated, it is learned. Such tonnages would contribute stability to the market.

For the Scandinavian supply, it is reported that most mills have sold up their output to the end of the year, some into early 1951. The market is reported short of pulpwood as well as woodpulp, and the situation is viewed as serious. World market prices are higher than those of the U. S. market, and demand is strong, prices firm.

During the year's first seven months wood pulp imports from Scandinavia showed a gain of 166 percent over like period of 1949. (Canadian gain was approximately 28 percent.) Any increase in pulp quantities during the fourth quarter from Scandinavia will be based on the speculative possibilities of the U. S. spot market, it is held. At today's contract levels, more would not come.

Waste Paper Offerings Heavier

Stimulated by editorial advice from a leading waste journal to market their wares as quickly and completely as they can, that to hold back material now is nothing short of folly, waste paper dealers have been moving supplies to the mills, in the East at least, at a better pace. Offerings to the mills are more frequent, the Eastern Conservation Committee (ECC) reports, and dealers were able to supply 98 percent of all consumed during the latest week.

Average weekly consumption during the first three weeks of August greatly exceeds the average weekly consumption of any third quarter during the last five years, reports Director Colley S. Baker for his group of mills.

Old Corrugated Eases Slightly

With the exception of *old corrugated*, which is now coming out in abundance, all prices held at the high levels of early August. Old corrugated is $2 to $3 easier in New York markets.

The situation has improved considerably within the last week on this grade, the ECC reports. "While here and there shortages in market supply are reported, the consuming industries as a whole have been able to acquire sufficient for current consumption and put away a few additional tons."

More of the mixed grades of waste paper should be available; it is chiefly a matter of collection, Director Baker says. It also is a matter of informing City and State Departments, office buildings, and other disposal centers that No. 1 *mixed* is now marketable. Your columnist has found that it still is being burned, though daily newspapers prate of overseas supplies being sought for this market.

Midwest Consumers Launch Program

A critical shortage of waste papers is understood to be hampering midwest consuming mills; and action to stimulate the flow of this vital raw material was started last week by the Public Relations Committee of the Midwest Consumers of Waste Paper. An advertising campaign which urges schools, churches, scouts and civic groups to earn money by collecting and selling waste paper was started in 51 newspapers in 25 midwestern cities with 100,000 or more population, Frank Block, Director of the Committee, said.

Dealers in the New York area feel this is an unnecessary step and speak out strongly against it. E.P.N.

Paperboard Production (Tons)*

	Aug. 19 1950	Aug. 12 1950	Aug. 20 1949
Production	229,349	224,414	188,028
New Orders	265,558	237,995	186,039
Unfilled Orders	679,065	646,656	310,125
Percent of Activity—Current			101%

Source: NPA.

FREE

From Western Precipitation—the organization that pioneered the commercial application of Cottrell Precipitation...

IF YOU ARE ENGAGED in any phase of industry where the recovery of dusts, fumes, fly ash, mists, fogs or other suspensions from gases is a problem, you will find this booklet on the COTTRELL Electrical Precipitator helpful and informative.

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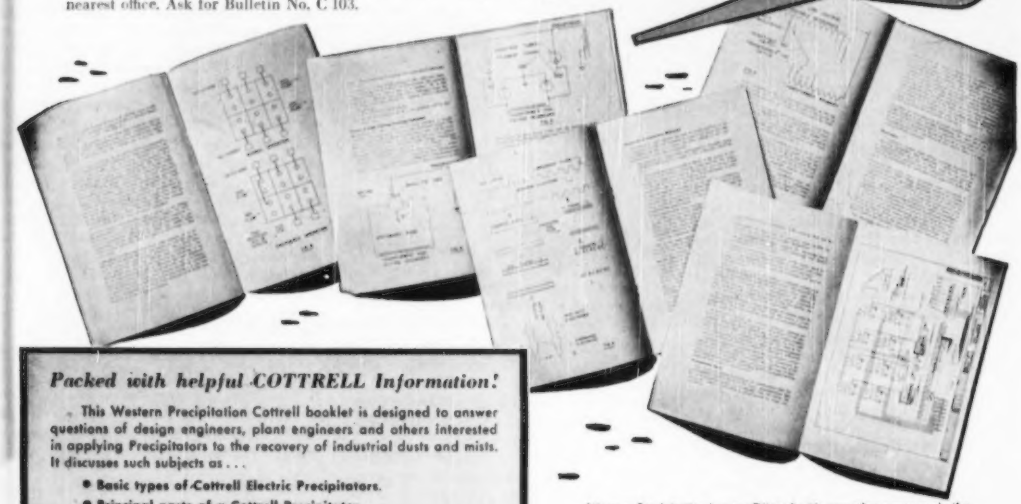
This 28 page booklet summarizes many of the basic facts you should know about modern COTTRELL Precipitators—the various types available, how they operate, principal types of electrode systems and rectifiers, shell constructions, etc. As long as the supply lasts, a free copy will be sent you on request to our nearest office. Ask for Bulletin No. C 103.

28 PAGES
of helpful facts to know about
COTTRELL ELECTRICAL PRECIPITATORS



Packed with helpful COTTRELL Information!

This Western Precipitation Cottrell booklet is designed to answer questions of design engineers, plant engineers and others interested in applying Precipitators to the recovery of industrial dusts and mists. It discusses such subjects as . . .

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- **Mechanical and Electronic Rectifiers.**
- **Various types of Collecting Electrodes (rod curtains, corrugated plates, dual plates, pocket electrodes, etc.).**
- **Removal of Collected Material.**
- **Factors in Shell Construction (steel, concrete, brick, etc.).**
- **Operating Efficiencies and the Effect of Various Factors on Performance.**

. . . and many other basic Cottrell facts. Write for your free copy of Bulletin C103 today while supplies are adequate!

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Paper TRADE JOURNAL

News of the Week

Westvaco's #5 Machine in Operation

Completely rebuilt at a cost of more than $2 million, the No. 5 paper machine at the Covington mill of West Virginia Pulp and Paper Co. has now been placed in operation after a shutdown of about six weeks.

The machine is expected to produce about 150 tons of paper daily, compared to an output of about 75 to 80 tons per day previously.

In addition to greater tonnages the new machine is expected to produce better quality paper because of an elaborate system of automatic controls which regulate every step of the paper making process and eliminate manual adjustments to the greatest practical extent. All instruments and control stations are located on the front or operating side of the machine. The machine will be used principally in the manufacture of papers, for sanitary containers for liquid and solid foods, and other bleached grades, such as file folder and tag. Previously the machine made semi-bleached kraft envelope as well as some bleached kraft specialties.

Aurora Reopens

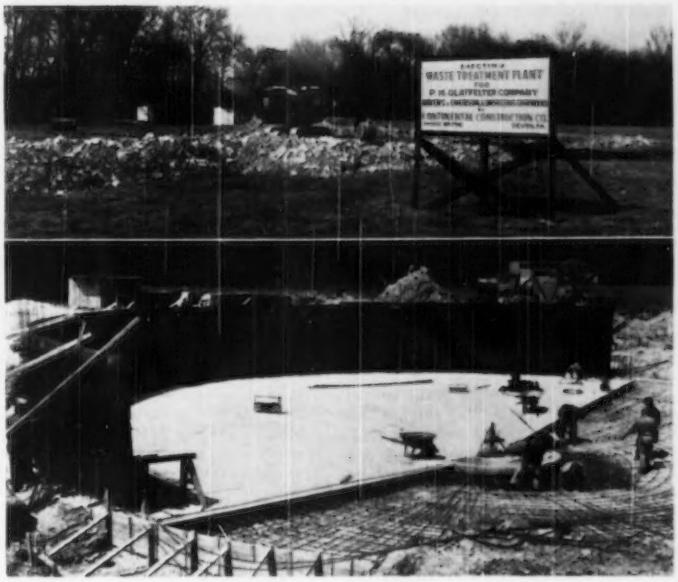
AURORA, Ill. — The Aurora Paperboard Co. plant, which has been closed since last April, has reopened. The plant, owned by the Davey Co. of Jersey City, N. J., shut down when negotiations between the local management and members of Local 902, United Paper Workers, C.I.O., broke down. Recently talks were resumed on the initiative of Jesse Jaconson, U.S. Commissioner of Mediation and Conciliation, Chicago, and a contract was signed.

Stillwater Tissue Mills Dismantled

GREENWICH, N. Y. — The Stevens & Thompson Paper Co., which recently purchased the equipment and property of the Stillwater Tissue Mills, Inc., has moved some of the converting equipment to its plant at Big Falls while the balance has been disposed of as junk. An official of the Stevens & Thompson Paper Co. stated that under present conditions his company has no intention of operating the Stillwater property.

Pacific Paperboard's Fourth Machine

LONGVIEW, Wash.—The Pacific Paperboard Co. has issued a call for additional employes to start its fourth paper machine. The Fourdrinier machine, recently installed, will produce corrugated material.



Glatfelter's Stream Improvement

SPRING GROVE, Pa.—In order to keep in stride with the "Clean Streams Program" of the State of Pennsylvania, the P. H. Glatfelter Co. is erecting a waste treatment plant as shown above.

The plans for the treatment works were developed jointly by the P. H. Glatfelter Co. and their consulting engineers, The Havens & Emerson Co. of New York, who specialize in this type of work.

The cost of the works now under way will be approximately $300,000 and is expected to be completed by December, 1950.

B S & W Improves Refuse Burner

VANCOUVER, B. C.—Bloedel, Stewart and Welch, Ltd., will spend $25,000 on its refuse burner at the plant at Port Alberni, B. C. Work will involve sealing of certain ventilation vents and installation of new type cones and improvement of ventilation chambers, as well as improvement and corrections to top screens.

C. Y. Robson, resident manager, said the program was designed to combat sawdust and fly-ash problems.

Fibreboard Plans Summer Expansion

TACOMA, Wash. — Fibreboard Products, Inc., has purchased approximately 11 acres of land adjoining its present plant at Sumner to be used for a large plant expansion, plans for which are now being prepared, according to T. L. Carey, district sales manager.

The enlargement of the Sumner division is part of the company's 10-year plant betterment and improvement program started in 1946 and involving capital expenditures of upwards of 50 million dollars. The Sumner division is one of 15 Fibreboard plants on the Pacific Coast and serves the Northwest and Alaska with shipping containers. Cartons for this area are furnished by the recently completed Fibreboard plant in Portland.

Drimnagh Fire

DUBLIN, Ireland—About fifty tons of pulp and waste paper were destroyed at Drimnagh Paper Mills, near Dublin, when fire broke out in the preparing room on July 29.

Brightwater On Six-Day Week

ADAMS, Mass.—The Brightwater Paper Co. is now operating on a six-day week schedule and is adding new employes. The total working force there is now about 275.

Newsprint Production in Japan

Japan has made vast strides under the occupation toward regaining its prewar position as the world's seventh largest producer of newsprint.

Due to the war, newsprint production dropped in 1945 to 76,500 short tons from the prewar total of more than 200,000 short tons annually.

Assisted by American forest products experts assigned to the Occupation Forces, Japanese manufacturers increased their newsprint production to 111,800 tons by 1948 and to 119,800 tons last year.

They expect to produce 140,000 tons this year, having manufactured 43,000 tons during the first four months of 1950 as a result of technological improvements and additional equipment built in Japan.

Currently, Japan is not meeting the domestic demand for newsprint, and fulfillment of this need is remote. During the peak production year of 1938 Japan's newsprint consumption was eight pounds per person in contrast to 71.3 pounds per capita in the United States, 17.6 pounds in the United Kingdom and 14.1 pounds in France.

Newsprint has always been the leading category in the Japanese paper industry. The peak production of 323,566 tons of newsprint reached in 1938, when Japanese plants in Korea and Karafuto contributed to the total, was nearly 20 percent of Japan's total paper output. After the war the contrast was still wider, with newsprint accounting for 23.5 percent of all paper produced.

Presently Japan has the plant capacity to produce 200,000 tons of newsprint annually. Pulpwood shortages, however, restrain the industry. The war years took heavy toll of Japan's forest supply, and since the surrender the drain on forests has been more than 100 percent of the annual growth.

While importation would be a convenient means for meeting the newsprint shortage, adequate foreign currency is not available to Japan for imports in any appreciable amounts. Small quantities, however, may be permitted. Under discussion as this is written are offers of newsprint from Canada and the United States.

But until Japan's economy has been sufficiently stabilized to allow private concerns to import newsprint freely, the fullest possible use of home resources must be made.

These resources were tapped increasingly after the introduction of western paper-making methods following importation of European machinery late in the 19th century. The Japanese realized that the ancient art of producing paper by hand, using the inner bark of shrubs, could not compete with the western method of manufacturing paper by machinery.

Intent on the industrial development of Japan, the government urged the two wealthy houses of Mitsui and Shimada to organize a paper-producing company. They formed the Oji Paper Manufacturing Co. in 1872 in what is now a ward in Tokyo. Two years later paper machines, bricks and other required materials arrived from England and an Englishman was engaged as the papermaker. An American mechanical engineer is reported to have directed construction of the mill which began operations in 1875.

Other mills soon followed and by World War II the Oji corporation controlled 35 subsidiaries which independently, in many instances, controlled the production of paper machine accessories such as felts, wires and equipment. With a subscribed capital of 300,000,000 yen and 33 pulp and paper mills, the Oji corporation produced approximately 85 percent of the paper made in Japan.

The dissolution of this vast monopoly, ordered by the Occupation, has been a prime factor in increasing the indigenous newsprint supply.

Japan now has five mills producing newsprint, as compared to 10 in 1938. The Tomakomai mill in Hokkaido, Japan's largest pulp and paper plant, accounted for more than 32 percent of the country's paper production and more than 75 percent of the newsprint production in 1948. When it began operation in 1910 to make Japan self-sufficient in newsprint, the mill had four Fourdrinier paper machines, manufactured by the American firm of Bagley and Sewell. By 1938 it had six 142-inch, two 100-inch and one 98-inch paper machines, 54 grinders and six sulfite digesters. It had a reported 500-ton daily capacity of newsprint, wrapping and other groundwood printing papers.

Most paper machines in Japan have 142-inch width wire and operate at about 1,000 linear feet per minute. The newsprint turned out by Japanese mills is a mixture of about 80 percent groundwood and 20 percent unbleached sulfite pulps.

Groundwood is used in 58 percent of Japan's total pulp production newsprint. A record 410,347 tons of groundwood pulp was produced in Japan proper during the peak year of 1941.

Also in 1941 the Japanese reached an all-time record in manufacturing the other main ingredient of newsprint, sulfite pulp. A total of 340,101 tons of the two types of sulfite pulp were produced—120,516 tons of paper sulfite and 219,585 tons of rayon sulfite.

The sulfite rayon mills, operating at only one-third of their maximum output, make more than 60 percent of Japan's total installed capacity of unbleached sulfite. Since their tonnage could be converted to paper sulfite, they are potential sources for increased newsprint.

Production of machine-made foreign-style papers in Japan totaled only 2,000 tons in 1881. At the start of the first world war some 200,000 tons of paper and paperboard were being produced yearly, and by 1918 it had climbed to 500,000 tons. In 1929 the figure reached 1,000,000 tons, and estimated output in 1940 and 1941 was more than 1,500,000 tons annually.

During World War II production declined rapidly, reaching a post-surrender low of about 231,000 tons in 1946. By 1948 paper and paperboard production had risen to nearly 500,000 tons, with 11.89 pounds being used per capita.

Much of the industry's progress can be traced directly to technical aid and advice from members of General MacArthur's Natural Resources Section.

Currently this section has been trying to increase paper production through greater utilization of hard woods and agricultural residual straw from rice, wheat, barley and other grains.

To further conserve pulp, the Japanese paper industry has set the following tentative standard for newsprint production:

a) Newsprint shall be made from not less than 80 percent groundwood and not more than 20 percent unbleached sulfite wood pulp. It shall be sold by the prime producer (the paper mill) in rolls only and in two widths, 43 and 64 inches, each roll containing 17 and 25 reams, respectively. A ream shall consist of 500 sheets, 43 x 32 inches, and shall weigh 50 pounds. The prime producer shall designate the rolls as newsprint.

b) Paper of similar quality, but cut into flat sheets or rolls of widths other than 43 and 64 inches, shall be designated by the prime producing mill as No. 36 sulfite printing paper.

The Japanese paper industry and other timber-using industries were fast depleting their forests until Occupation specialists reduced overcutting and urged a vast reforestation program for Japan. This necessity for ending excess cutting of saw timber will prevent expansion of wood-consuming industries, including the paper mills, for many years. Any notable increase in Japanese paper production above her yet unattained capacity therefore is not likely until better forest management and a sound reforestation program take effect.

Facing an inadequate income from exports, Japan will find it difficult to import pulpwood, wood pulp or newsprint for some time. But when the country's foreign exchange is sufficient to permit importation of these commodities, newsprint should be preferable to wood or wood pulp as an import because it requires less shipping space.

Wet Strength Papers—What They Are And Why They Are Objectionable As Wastepaper

Eastern Conservation Committee of the Waste Paper Consuming Industries, 370 Lexington avenue, New York 17, N. Y., reports inquiries have been received from a number of wastepaper packers, who, anxious to meet all mill requirements in the grading of paperstock, have asked for a list of what should be thrown out as Wet Strength Papers in their sorting operations. It is difficult to give a complete list, but we have prepared one that should serve as a guide at the present time.

First of all, what is a Wet Strength Paper? In its broadest sense, this term could include all papers, paperboards, etc., which exhibit greater than normal resistance to defibering in water. In its restricted sense, this term would include only those paper and paperboard products which contain so-called wet strength resins. In both cases and for practical purposes, one is faced also with the matter of the amount of wet strength agents used, because there are many grades of paper in which wet strength agents are used, but in such small amounts that they probably would not cause difficulty in reuse for papermaking purposes.

Broadly defined, Wet Strength Paper could include such materials as cellophane, parchment, coated, lacquered and waxed papers, and asphalt-saturated and laminated papers and paperboards. These products could cause a great deal of difficulty in reuse, but they are comparatively easy to identify and the problem is mainly one of sorting by the packer.

In addition to those types of products indicated above, the use of synthetic latex materials is increasing in industry, and these materials contribute wet strength in the product and, depending upon the amount used, might or might not be easily identifiable.

In ordinary papermaking, wet strength agents, in the restricted sense, such as melamine and ureaformaldehyde are used in a wide variety of papers from towels and blueprint papers to such things as multiwall bags to produce wet strength. They also are used in smaller amounts in some grades such as ledger paper, for instance, to enhance dry strength and erasability. These grades, however, ordinarily do not use sufficiently large dosages to cause difficulty in reuse. Such grades, however, could be termed Wet Strength grades in the strict sense of the word.

In listing Wet Strength Papers that are objectionable as wastepaper, we do want to point out that some of these papers, when completely separated from other papers, are marketable. They include waxed papers and waxed paper products, such as milk containers, drinking cups, bread wrappers, soda straws, etc., which may be de-inked and de-waxed by certain mills. The following list of papers and paper products constitute what are generally considered objectionable papers in wastepaper packing:

Abrasive papers; Absorbent paper products Army map paper.

Bag papers—Asphalt-laminated multiwall bags, Ice bags, Potato bags, Wet vegetable bags; Bank-note papers (foreign); Bath mats; Beer case boards; Bib paper; Blueprint paper; Bottle cap board; Bottle labels; Butchers wrap; Butter, lard and oleo wrappers.

Can wrap; Cellophane; Check paper; Coating rawstock; Crate liner; Currency (foreign); diaper paper; Draper paper; Dusting paper.

Filter papers; Fluorescent map paper; Frozen food locker paper; Frozen food carton stock; Fruit wrap.

Glassine papers.
Ham wrap.
Industrial cleaning & polishing tissues.
Kraft waxing papers.
Lettuce crate separators.
Photographic papers.
Security papers; Saturating papers; Shotgun shell paper.

Table napkin stock; Tea bags; Towels; Twisting tissues.

Windshield wiping towels.

The Paper Shipping Sack Manufacturers Assn. are making an attempt to identify the various types of papers that go into multiwall bags. They have recommended that bags which contain all natural kraft be marked with the initials ANK on the outside of the bag. Also, with the use of polyethylene coated papers, this fact is to be made known on the outside of the bag, and an identification is to be made when asphalt plies are used.

ECA Funds For Austria Paper Mill

WASHINGTON, D. C. — Expansion of Austria's sole sulphate pulp and paper plant, at Frantschach, will receive substantial aid through an ECA authorization for purchase of modern U. S. machinery and other equipment announced by that agency this week.

Under a Marshall Plan industrial aid program, designed to assist the Austrian plant to meet both domestic and world market needs, the ECA authorized $1,297,000 for purchase of modern machinery in this country. The total cost of the expansion program is estimated at $3,079,500, of which approximately $1,780,000 is to be financed with Austrian currency and the balance, equivalent to about $2,500, with other European currencies.

The sulphate pulp and paper mill is owned by Natronzellstoff-und-Papierfabrik Aktiengesellschaft. It is estimated that the mill's sulphate pulp production would be increased to 24,000 metric tons per year from 18,000 and kraft or brown sulphate paper production from 12,000 to 24,000 tons. At present Austria imports about 6,000 tons of sulphate pulp annually, which would no longer be required after completion of the expansion project.

The program is calculated to expand production to permit substantial amounts to be exported, the ECA stated. The resultant earnings for Austria, as well as the savings gained from elimination of sulphate pulp imports, would improve Austria's foreign exchange position by the equivalent of something more than $1 million per year, the agency reported.

With ECA dollars, said the agency, it is planned to purchase modern U. S. pulp machinery and a modern kraft paper machine, with auxiliary equipment. The paper machine will be used exclusively for production of kraft paper for multi-wall bags, which are badly needed in Europe, it is reported, for packaging cement and other bulk commodities.

Fire Causes $10,000 Damage

NIAGARA FALLS, N. Y. — A flash, two-alarm fire of undetermined origin, on August 24, caused an estimated $10,000 damage to property, equipment and stock at the plant of the Certain-Teed Products Corp.

The blaze began in a pitch kettle in the plant's saturation section, raced upwards through saturators and into the fill and mixer plant. Drafts from the open doors in the warehouse and shipping department fanned the flames quickly and fire burst through one point in the saturation department roof within five minutes after the blaze began.

INDEX, FEATURE ARTICLES, PAPER TRADE JOURNAL
VOLUME 130 JANUARY 5, 1950 to JUNE 29, 1950

SUBJECT	DATE NO.	PAGE NO.
Abstract of 1949 Annual Report, National Council for Stream Improvement	Mar. 9	16
Abstract of 1949 Annual Report, National Council for Stream Improvement	Mar. 16	22
Abstracts of Paper Presented APPITA Annual Convention	May 5	25
Allis-Chalmers — America's Most Versatile Machinery Builder	Apr. 27	30
Analysis of Pulp and Paper Industry and the Raw Material Supply	Feb. 16	33
Analysis of Pulp and Paper Industry and the Raw Material Supply. Part I—Section 2	Mar. 16	17
Analysis of Pulp and Paper Industry and the Raw Material Supply. Part I—Section 3. Part II—Effect of the Raw Material Shortage on the Industry	Apr. 6	23
Analysis of Pulp and Paper Industry and the Raw Material Supply—Part II—Section 2	Apr. 27	23
Analysis of Pulp and Paper Industry and the Raw Material Supply. Part II—Section 3	June 1	12
The American Concept	Feb. 23	128
Are We Forfeiting Freedom?	Mar. 30	14
The BT-System for Soda and Heat Recovery in Sulphate Pulp Mills	Apr. 20	40
Businessman and Congressman	Feb. 23	122
The Casein Situation	Feb. 23	89
Chemical Composition of Ponderosa and Sugar Pine Barks	Apr. 27	37
Chemi-Groundwood Process Developed at N. Y. State College of Forestry	Apr. 13	27
The Consumption Trend in Paper and Board	Feb. 23	71
The Corrosion and Lining of Sulphate Digesters. An Annotated Bibliography (Through 1949)	May 25	32
The Corrosion and Lining of Sulphate Digesters Part II	June 1	20
Cotton Cuttings in Short Supply	Feb. 23	96
Development of the Hydraclone	June 15	76
Dry-Formed Boards, Bonded with Resins or Other Materials	May 11	26
Durisol Light Weight Pre-cast Concrete	June 8	22
Effect of Fibre-size Distribution on the Properties of Hardboards Made from Fiberized Water-Soaked Douglas-Fir	June 15	106
Effective Organization in Paper Mill Operation	Mar. 16	30
Engineered Instrumentation for Modern Multi-Stage Bleaching Systems	Mar. 30	19
Excerpts from April, Pulp, Paper and Board Industry Report	Apr. 27	54
Excerpts from January Pulp, Paper and Board Industry Report	Jan. 26	24
Fabricating Quality and Performance into Corrugated Shipping Containers	Feb. 16	26
February, Pulp, Paper and Board Industry Report	Mar. 2	18
Filtration and Papermaking	June 15	87
Fine Paper Industry of 1950 as Viewed by a Manufacturer	Mar. 30	25
Fines in the Paper Machine Furnish	June 15	122
Getting the Most from V-Belts	Jan. 26	29
Groundwood Papers in 1949	Feb. 23	68
Growth and Yield of Red Pine	May 11	30
Guideposts for Business Planning in 1950 and Beyond	Feb. 23	120
High Cost of Reducing Production Rates	Jan. 12	33
Implications of Changing of Security Background of our Present Systems	Feb. 9	19
Improved Logging Methods	Mar. 23	26
Industrial Injury Control As It Appears to the Superintendent	Feb. 9	16
Instrumentation of the Chemi-pulper Continuous Digester	May 18	21
Is It Always the Paper?	June 15	98
Is the Northeast Headed for Federal Power and Water Control?	Jan. 26	21
A Joint Responsibility for Industry and the Chamber of Commerce	June 15	126
The Importance of the Paper Industry to N. Y. State	Apr. 20	14
The Kind of Selling I Like	Apr. 6	33
Labor's Interest in the Pulp and Paper Industry	Feb. 23	105
Legal Events of the Past Year of Interest to the Paper Industry	Feb. 23	123
Limitations of Ink Adjustments to Paper	June 15	118
Maintenance of Anti-Friction Bearings in Paper Machine Dryer Sections	June 15	74
March, Pulp, Paper and Board Industry Report	Mar. 30	12
The Market for Dissolving Wood Pulp	Jan. 12	29
Market Pulp Activity—1949	Feb. 23	82
Market Review of Casein, Rosins and Resins	Feb. 23	92
Marketing Problems and Opportunities for Management	Mar. 23	33
The Marshall Plan and the European Pulp and Paper Industry	Feb. 23	114
Mill Painting and Its Relation to Mill Maintenance	June 15	102
The Multiwall Paper Shipping Sack Industry	Feb. 23	80
The Natural Distribution of Red Pine in N. Y.	May 25	26
Neutralization of Static Electricity	Apr. 13	33
New Methods for the Treatment and Use of Wood Waste	Jan. 5	29
Newsprint Paper in 1949	Feb. 23	72
New York Has An Opportunity	Mar. 23	14
1949—A Year of Consolidation of Past Advances for TAPPI	Feb. 23	118
1949 with a Twist on 1950 in the Waste Paper Industry	Feb. 23	94
Nylon in Papermaker's Felts	May 4	21
Our Position as World Traders	Mar. 23	21
Outlook for Canada's Pulp and Paper Industry	Feb. 23	85
The Outlook for Kraft	Apr. 6	37
The Paper Board Situation	June 8	27
The Paper Industry in 1949	Feb. 23	57
Paper Industry Returns to Record Production Following Inventory Liquidation	Feb. 23	53
Paper Mill Air Compressor Operation	Feb. 16	19
Paper Troubles in Offset Lithography	Mar. 23	36
Patentable Inventions	May 4	37
Plastics and the Paper Industry	Feb. 23	124
Portable Chipper in Woods Operation	June 29	25
Preparation and Characteristics of Fibrepulp for Hardboard	June 1	23
The Production and Refining of Semichemical Pulp for Corrugating Board	June 29	22
Production of Neutral Semi-chemical Sulphite for High Grade Book Paper	June 29	27
Production of Tall Oil in Finland	Jan. 5	27
Progress in Coating Adhesives	Feb. 23	90
Progress in Paper—1900-1950	Feb. 23	65
Proposed N. Y. S. Stream Classifications Water Pollution Controls	May 11	14
Patents	Jan. 19	40
Pulp and Paper Research at Syracuse	Apr. 13	19
The Pulp and Paper Industry in Taiwan	May 25	30
Recent Trends in Wood Pulp	Feb. 23	62
Relation of a Maintenance Program to Felt Operation	Feb. 9	26
A Report to the Paper Industry on the Need for Granting Fellowships to Economics Teachers	Jan. 12	24
Review of 1949 in the Unbleached Kraft Paper Industry	Feb. 23	66
A Review of the Paper Grade Market Pulps	Feb. 23	58
The Role of Life Insurance Companies in Paper Industry Financing	Apr. 20	20
Ross Engineering—Builders of Air Systems	June 8	19
Rotameters for Paper and Pulp Mills	May 4	16
Scandinavia Intends to Stay on the Road Leading West—to Supply Regularly the U. S. Market	Mar. 2	14
Selecting Paper Mill V-Belts	Jan. 19	35
The Social Responsibility of Business	June 8	24
Some Aspects of Oxidizing Sulphate Black Liquor	Jan. 19	37
Some Hopeful Experiments in Industrial and Community Relations	June 15	68
Stainless-Clad Steel for Digesters	May 18	23
State Forest Products Research in Michigan	Feb. 16	22
Status of Portable Chippers	Jan. 26	31
Stokers Firing of Large Boilers Past and Future	May 18	13
The Story of RFC	Jan. 26	26
Tariff Reduction and Currency Devaluation, Their Effect on the Pulp and Paper Industry	Feb. 23	98

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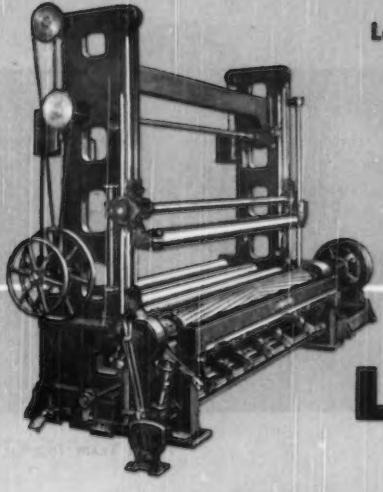

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SUBJECT	DATE NO.	PAGE NO.
Tariffs and Their Relation to the Domestic Economy	Feb. 23	126
TAPPI Reports on 1949	Feb. 23	112
Technical Control in Converting Operations	Mar. 30	24
36th Annual Meeting CPPA Technical Section	Feb. 2	24
The Use of Disc Refiners in the Sulphite Mill	June 22	21
The Use of Filter Paper for Collecting Aerosols	May 11	21
Use of Polyethylene as a Paper Coating	May 22	31
Utilization of Redwood Bark	Apr. 6	18
Utilization of Weather Information by the Pulp & Paper Industry	June 15	94
What We have Learned About Diesel Engines	June 15	83
Where Do You Go From Here	Feb. 23	107
Which Way Scandinavia	Feb. 23	81
Who Buys?	June 22	19
Wood Fibers from Veneer Waste	Feb. 9	29
Wood Room Losses and Their Control	June 15	92
Wyandotte Chemicals Corp., Mfrs. of Chemical Materials for the Paper Industry	May 25	19
Your Job—Your Future—Your Security	Apr. 27	19

AUTHORS	ISSUE NO.	PAGE NO.
ANDERSON, NILS, JR	Feb. 23	90
ANTHONY, RICHARD H.	Feb. 23	126
ARIES, ROBERT S.	Jan. 12	29
ASPLUND, ARNE	June 1	23
ATCHISON, JOSEPH E.	Feb. 23	114
BACHMANN, A. E.	Feb. 23	118
BAIRD, P. K.	June 15	106
BECKETT, WILLIAM	Feb. 23	98
BENDER, F.	May 11	26
BENNETT, J. S.	May 18	13
BENSON, RAYMOND W.	May 11	30
BOURNE, H. G.	May 11	21
BOWERS, HAROLD	Jan. 5	29
BRUNO, MICHAEL H.	June 15	98
BURGESS, L. M.	June 22	31
BURGY, MARLOWE	June 29	25
BURKE, JOHN P.	Feb. 23	105
BUTTERICK, J. A.	Mar. 30	24
CANFIELD, ROBERT E.	Feb. 23	68
CLAUSON, KARL A.	Feb. 23	58
COLLINS, T. T., JR.	May 25	32
COLLINS, T. T., JR.	June 1	20
COLLINS, T. T., JR.	Jan. 19	37
COOK, DAVID B.	May 25	26
COPULSKY, WILLIAM	Jan. 12	29
DAHLBERG, HAROLD	May 4	21
DALE, J. D.	June 8	22
DENNIS, HENRY	Mar. 23	26
DOBROW, MORRIS C.	Feb. 23	53
DONALDSON, JAMES	Feb. 23	81
DONALDSON, JAMES	Mar. 2	14
DYKE, GEORGE E.	June 8	27
EBERHARDT, LEE E.	June 22	21
EDWARDES, VANCE P.	June 15	92
ELMENDORF, ARMIN	Feb. 9	29
ERLICHER, HARRY L.	Apr. 6	33
EVEREST, D. C.	Feb. 23	65
EVERY, DERNELL	Feb. 23	66
EVERY, DERNELL	Apr. 6	37
FOBES, E. W.	Jan. 26	31
FUNK, W. H.	May 18	23
GARLAND, HEREFORD	Feb. 16	22
HAUG, ANTON J.	June 15	122
HENRY, DALLAS E.	Feb. 9	16
HERON, ALEXANDER R.	Feb. 9	19
HERSHMAN, S. I.	Feb. 23	94
HICKS, TYLER G.	Jan. 26	29
HICKS, TYLER G.	Feb. 16	19
HICKS, TYLER G.	May 4	16
HICKS, TYLER G.	Jan. 19	35
HILL, DR. ALLAN C.	Feb. 23	85
HOLBROOK, J. E.	Mar. 23	33
HUBBARD, J. K.	Apr. 27	37
HUMPHREY, J. D.	Apr. 27	37
JACKSON, C. D.	Feb. 23	128
JAHN, EDWIN C.	Feb. 23	124
JUVONEN, V. V.	Jan. 5	27
KASSING, B. L.	June 15	87
KURTH, E. F.	Apr. 27	37
LACOSTE, RICHARD	Jan. 26	26
LEWIS, HARRY F.	Apr. 6	18
MACDONALD, R. G.	Feb. 23	112
MAKARA, FRANK	May 4	37
MAKARA, FRANK	Jan. 2	40
McLAREN, C. G.	June 29	25
MESSAROS, F. C.	May 18	15
MONTGOMERY, MARGARET J.	Jan. 12	33
MURPHY, E. P.	Mar. 30	19
MURTFELDT, L. W.	June 29	27
NEUBRECH, W. LEROY	Jan. 26	24
NEUBRECH, W. LEROY	Mar. 2	18
NEUBRECH, W. LEROY	Mar. 30	12
NEUBRECH, W. LEROY	Apr. 27	54
NICOLETTI, ANTHONY	Feb. 23	96
NOURSE, EDWIN G., DR.	Feb. 23	122
PARKES, HOLCOMBE	Feb. 23	107
PARSON, A. O.	Feb. 16	26
PECK, S. A.	Mar. 16	30
PENNELL, M. S.	Apr. 13	33
PERRY, HENRY J.	Apr. 20	14
PERRY, HENRY J.	Jan. 26	21
PERRY, HENRY J.	June 22	19
PERRY, HENRY J.	Apr. 27	19
POCTA, FRANK	Feb. 23	80
PORTER, JOHN M.	June 15	94
REED, ROBERT F.	Mar. 23	36
REES, E. A.	May 4	21
RITCHIE, JAMES L.	Feb. 23	62
RODERICK, HOWARD F.	May 25	19
SAPP, I. E.	June 29	22
SCHEVE, KLAUS G.	Feb. 16	33
SCHEVE, KLAUS G.	Mar. 16	17
SCHEVE, KLAUS G.	Apr. 6	23
SCHEVE, KLAUS G.	Apr. 27	23
SCHEVE, KLAUS G.	June 1	12
SCHWARTZ, SIDNEY L.	June 15	106
SHALLCROSS, RUTH E.	Apr. 20	20
SHIELDS, MURRAY	Feb. 23	120
SHOBE, O. F.	June 15	102
SMITH, RALPH H.	May 25	26
SMULLEN, GEORGE C.	Feb. 23	89
SPENCER, JOHN A.	June 16	68
STEVENSON, LOUIS T.	Feb. 23	71
STEVENSON, LOUIS T.	Feb. 23	57
STREETT, L. P.	May 11	21
SUN, W.	May 25	30
SWINGLE, WILLIAM S.	Mar. 23	21
TINKER, E. W.	June 15	126
TOMCZAK, S. E.	June 15	83
TROBECK, KARL GUSTAF	Apr. 20	40
VINCENT, REX	Feb. 23	82
WALSH, J. M.	Feb. 23	92
WEYMOUTH, F. A.	June 15	118
WESTBROOK, V. J.	June 15	74
WHEELER, WALTER H.	June 8	24
WHITE, W. A., JR.	June 15	76
WHITTEMORE, LAURENCE F.	Mar. 30	14
WHYTE, MALCOLM K.	Feb. 23	123
WYCHE, E. H.	May 18	23
WILLIAMSON, GEORGE E.	Mar. 30	25
WOODSIDE, L. M.	Feb. 9	26
ZIMA, J. J.	Feb. 23	72

H & W Mobile Expansion

MOBILE, Ala. (AP)—An $8,500,000 paper mill expansion which will require 300 additional employes was reported under way on August 12. The County Board of Revenue has granted tax exemptions to Hollingsworth & Whitney Co. for the scheduled increase in its big Mobile operations.

May Expand Power Development

VANCOUVER, B. C. — Expansion of the John Hart power development by the B. C. Power Commission on Vancouver Island may be undertaken. Since this plant was developed two large new pulp mills have gone into operation on Vancouver Island, one at Alberni and one near Nanaimo. Now a $40 million pulp and paper mill is planned for Duncan Bay, almost beside the John Hart development. Several other industrial projects are also rapidly taking shape on Vancouver Island. As a result of this development B. C. Power officials are giving serious consideration as to whether further expansion of the John Hart project will be necessary.

S. R. Weston, chairman of the commission, said he was not yet prepared to make any statement on the subject, but he admitted that the problem was being carefully studied. At present the John Hart plant is producing 112,000 horsepower in four units.

United Board Advances Kaler

SYRACUSE, N. Y.—Edwin W. Kaler, formerly general sales manager of United Board and Carton Corp., has been named vice-president of the corporation. United has also named Warren J. Gottemeyer and Carl R. Spadt to the carton sales staff.

Powell River Link With Vancouver

VANCOUVER, B. C. — British Columbia's Public Utilities Commission now has an application for a franchise to operate a car ferry from Whytecliff to Roberts Creek. This would open up roads up Howe Sound and along the coast north as far as Pender Harbor. It is believed, however, that the commission will not grant the franchise to operate across Howe Sound unless the company is also willing to provide a ferry service across Jervis Inlet. This second service would link up the pulp and paper town of Powell River by road with Vancouver.

Canadian Stocks Advance

OTTAWA—Stocks of pulp and paper group advanced to 372.8 on August 10, compared with 317.4 on July 13, up 17.5 percent, and 367.7 on June 22, up 1.4 percent, it is reported here.

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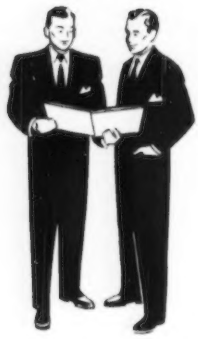

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Rotary Screen for Laboratory Separation of Shives from Mechanically Prepared Wood Pulp*

BY H. W. GREIDER,[1] R. A. MACARTHUR,[1] and L. C. GISCHIG[1]

Synopsis

This paper describes a laboratory screen for separation of shives according to their lateral dimensions from mechanically prepared wood pulp. (A wood shive is defined as a fiber bundle having a minimum lateral dimension.) The use of this screen in conjunction with the Bauer-McNett classifier, which evaluates fiber length, affords substantially complete estimation of the dimensional characteristics of mechanical wood pulp.

The screen described in this paper was developed as part of a cooperative investigation by the members of The Asphalt Roofing Industry Bureau on the effect of shives in Asplund defibrated wood upon the weatherability and over-all quality of prepared roofings containing Asplund fiber. When such roofings are exposed to weathering, fiber bundles migrate to the surface of the roofing and leave holes or pits which can accelerate failure of the roofing. Shives also cause checking and breaking of the roofing felt during saturating and coating operations in the manufacture of asphalt roofings.

Based upon several years of observation of a series of roofings containing various amounts of hardwood and softwood Asplund fiber, the Research Committee of the Asphalt Roofing Industry Bureau has *tentatively* defined a shive as "a fiber bundle having a lateral dimension in excess of 0.015 in." Pending the results of continued observation on the effect of further aging of the exposed roofing, the fiber bundles of lateral dimension smaller than 0.015 in. are considered not to be deleterious in the roofing felt; it is further considered that the length of the fiber bundle is not a factor in the weathering resistance of the roofing.

Materials Tested

In order to evaluate the performance of the screen, heat-treated Asplund defibrated, mixed-hardwood (containing oak, cottonwood, poplar, and catalpa); softwood (predominantly New Jersey pine); and heat-treated mixed-hardwood were screened.

Description of Screen

The details of the shive screen in its present form are shown in *Figures 1 to 4.*

The screen consists of a circular drum which rotates with its lower edge immersed in a pan of water. Water is supplied to the interior of the drum through a hollow drive shaft. The drum is so designed that one end can be easily removed, for introducing and removing the stock. The pan is supported on a separate shelf as shown in *Figures 3 and 4.* The position of

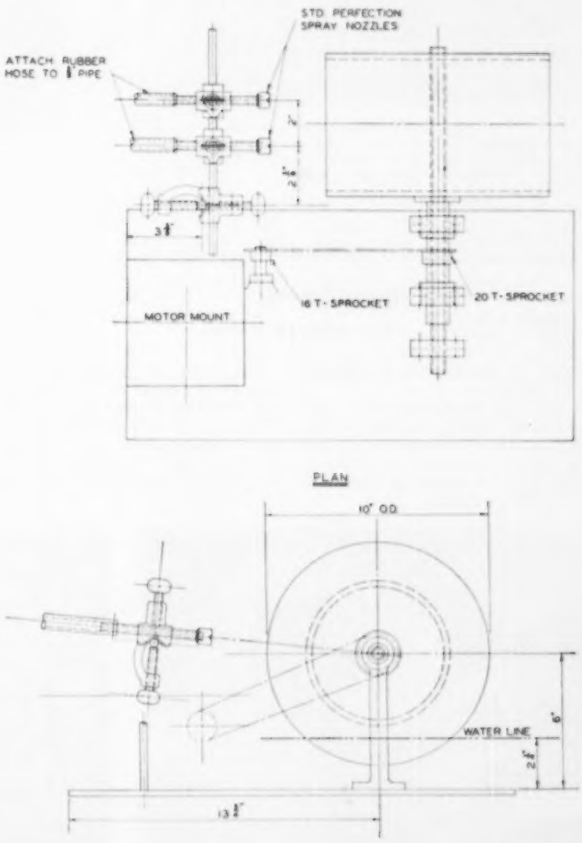

Figure 1—Details of screen.

* Presented at the Fifty-third Annual Meeting of the American Society for Testing Materials.

[1] The Philip Carey Manufacturing Co., Lockland, Ohio.

[2] Cylinder stainless steel stock is supplied by Harrington and King Perforating Co., Chicago, Ill.

[3] Boston Gear Works Catalog No. MB5840S.

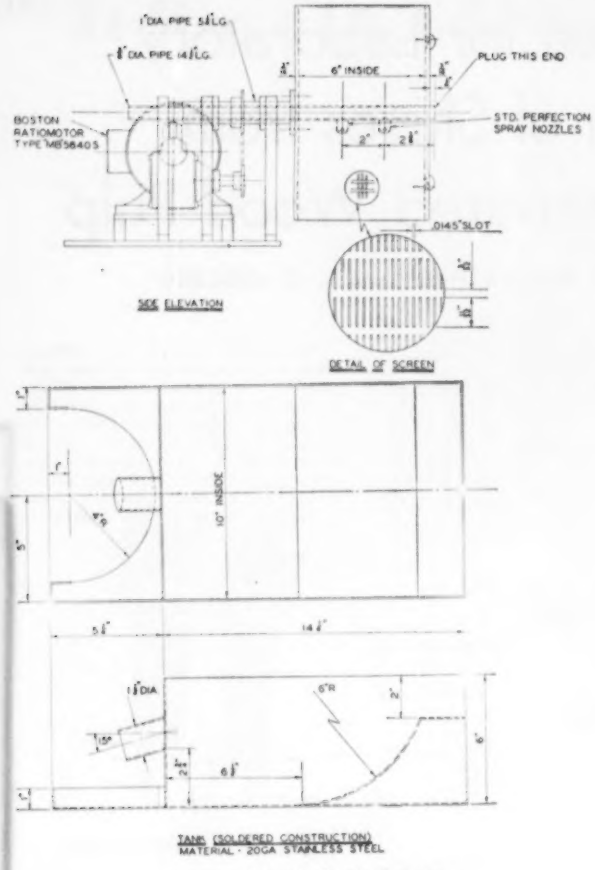

Figure 2—Details of screen.

the surface of the water in the pan is shown in *Figure 1*.

The cylindrical surface of the drum is made of No. 24-gage stainless steel[2] having parallel perforations measuring 0.0145 by 11/32 in., on 3/64-in. centers, with the long dimension of the slots running circumferentially.

The drum is driven at 34 rpm. through sprockets by a Boston Ratiomotor[3] having a rated speed of 43 rpm.

Fibers and fiber bundles whose lateral dimensions are smaller than 0.0145 in. are washed through the perforated screen by water from the two internal Perfection No. 2 spray nozzles manufactured by Binks Manufacturing Co., Chicago, Ill. Each nozzle provides a spray angle of about 115 deg. and delivers about 28 gal. per hr. at a water pressure of 40 psi. The screen is kept clean by two externally mounted Binks Perfection No. 3 spray nozzles, each having a capacity of about 34 gal. per min. at 40 psi. The overflow spout in the pan (see *Figures 3 and 4*) is so placed as to hold the water level as shown in *Figure 1*.

The material washed through the screen may be collected on a 325-mesh or similar size screen, for analysis in a Bauer-McNett classifier or for further examination of fiber length and diameter.

Procedure

Present practice is to wash 10 g. (moisture-free basis) of prepared wood fiber in the screen for 45 min. with a water pressure at the spray nozzles of 60 psi. These conditions appear to provide a reasonably reproducible estimate of the shive content of the pulp. But it must be admitted that the determination is somewhat empirical, as is the case when evaluating fiber *length* in the Bauer-McNett classifier. The sample is prepared by taking a 10-g. representative sample of moisture-free stock which was prepared from a previously dried sample of defibrated wood weighing approximately 200 g. The 10-g. sample is mixed with 400 ml. of water, in a propeller type stirrer, until it is thoroughly dispersed. The mixing should not be so vigorous that the shives will be disintegrated.

After screening, the material re-

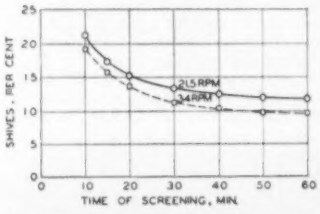

Figure 5—Effect of screen speed on estimated shive content. Asplund hardwood. Water pressure, 60 psi.

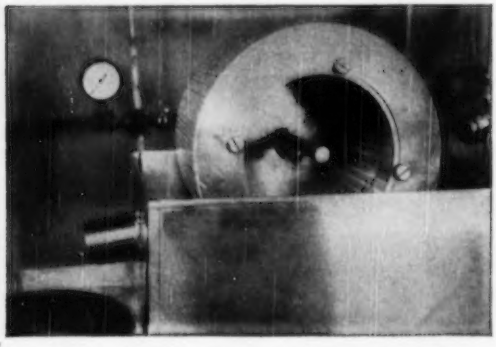

Figure 3—Side view of screen showing showers and pan door removed.

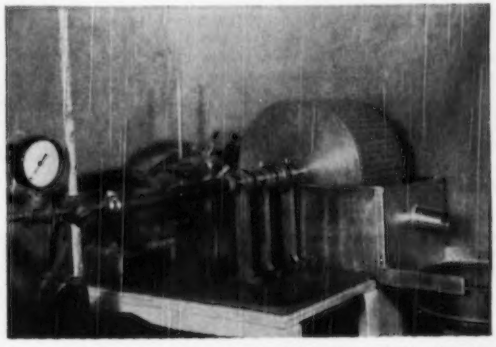

Figure 4—Side view of screen showing hollow drive shaft with water feed pipe.

Figure 6.—Asplund hardwood pulp material retained in screen with 0.0145-in. slots.

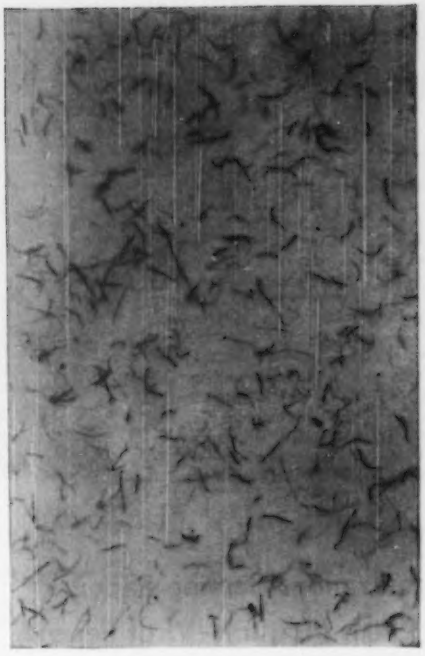

Figure 10—Asplund hardwood pulp material washed through 0.0145-in. slotted screen and retained on 10-mesh Bauer-McNett screen.

tained in the screen is dried and weighed. This weight is considered to be the weight of shives present in 10 g. of the original stock.

Test Results

The variables having effect upon the estimated shive content of a pulp include: *(a)* fiber sample weight, *(b)* screen rotation rate, internal spray direction, *(c)* nozzle pressure, *(d)* duration of the screening, and *(e)* orientation of perforations.

A weight of fiber of 10 g. (on a moisture-free basis) has been chosen as being of sufficient size to allow proper sampling of the pulp. Also this size of sample is not too large for effective screening in the time selected. When pressures greater than 20 psi at the internal nozzles obtain, the speed of rotation of the screen is not extremely critical. *Figure 5* shows the relation between the time of screening and speed of rotation on a hardwood Asplund pulp. It is to be noted that at the screening time of 45 min., there is a difference of about 2 per cent in the apparent shive content, the lower apparent content being that obtained with the faster screen. This difference is somewhat greater than is to be expected due to difference in the samples.

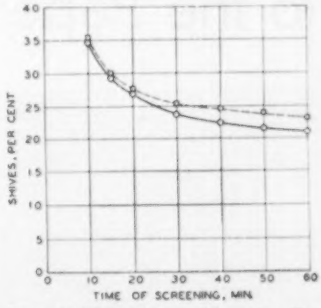

Figure 8—Effect of time of screening. Defibrated hardwood. Water pressure, 60 psi. (Two samples).

Early tests showed that the fibers and fiber bundles, with no showers in the screen, were picked up and carried around the inner surface of the screen and that these fibers and fiber bundles were generally oriented parallel to the circumference of the screen. Presumably because of this orientation, the screen with the long direction of the slot running circumferentially provides a faster separation of shives due to faster washing-through of the finer fibrous material.

The internal showers must obviously be directed in such manner as to force the smaller fibrous material through the screen. Extended tests have shown that for fastest separation this shower

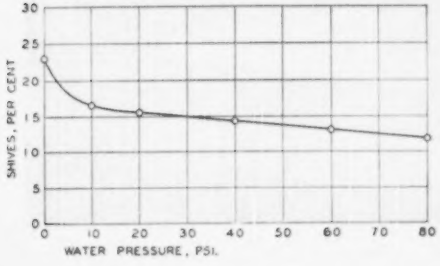

Figure 7—Effect of water pressure on estimated shive content. Asplund hardwood pulp. Screened 45 min.

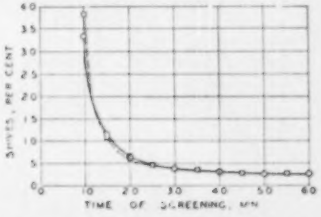

Figure 9—Effect of time of screening. Defibrated softwood. Water pressure, 60 psi. (Two samples).

must be directed toward the line of contact between the screen and water surfaces, where the screen emerges from the water.

The water pressure of the internal showers and the duration of screening have a marked effect upon the results of the test. This is believed to be due almost entirely to the fact that most shives carry attached to them a more or less loosely held fibrous material that is removed by the action of the showers and which can pass through the screen if it is torn loose from the main bundle by the action of the water. Such material is shown in *Figure 6* as constituting part of the larger fiber bundles. *Figure 7* shows the effect of water pressure at the showers upon the estimated shive content of a hardwood pulp. It would appear that the water pressure is critical and that a carefully controlled, arbitrarily selected pressure is necessary. This can be accomplished by the use of a reducing valve in a line of higher pressure than that used in the tests.

Figures 8 and 9 show the effect of duration of test upon the estimated shive content of hardwood and softwood Asplund pulps, respectively. These data are typical. From them, the screening time of 45 min. is indicated as adequate for relative estimation of shive content.

Figures 6 and 10 show, respectively the shives separated from a typical Asplund defibrated pulp, and that portion of the material in the pulp passing through the screen which has been collected on the 10-mesh screen of a Bauer-McNett fiber classifier. It is to be noted from *Figure 10* that a few ribbon-shaped fiber bundles having one lateral dimension greater than 0.0145 in. have passed through the screen. This cannot be avoided and is a weakness in the screening method, but the error in the evaluation of the shive content of a pulp due to this factor is considered of little significance.

Experience with this type of separation indicates that more reproducible results could be obtained by running two screens in series, the first screen having an opening of about 0.030 in. in width. This screen would remove the larger shives which ordinarily have a great many loosely attached finer fibers that are torn loose in the present screen. Removal of these larger bundles before screening in the screen with the 0.0145-in. openings would greatly reduce the number of finer fibers produced in the screen by mechanical action.

Conclusions

It would appear that a screen of the general type described will provide an adequate means of estimation of the amount of shives in mechanical wood pulp. Because of the somewhat empirical nature of the values obtained, all details of construction and use of the screen must be specified.

Organizations Serving Paper And Pulp Industry—VI of Series

Taylor, Stiles & Co.—Cutting Machine Specialists to the Paper Industry

Long before Henry Ford began to talk about decentralization of industry, to locate auxiliary parts and supply plants in rural communities, Taylor, Stiles & Co., cutting machine suppliers to the paper industry, was a thriving "small" business located in the beautiful Delaware River town of Riegelsville, N. J. For many years it has been the source of most of the rag cutting equipment for the great mills across the country.

The company was formed in 1863, first making high grade knives for woodworking and paper, then supplying the cutting machine needs of paper manufacturers, and others of the infant industries of the day.

Today, the Taylor-Stiles organization is a group of highly trained and experienced specialists, with a plant that compares favorably in its equipment with any in the world. Many of the machines used here to produce Taylor-Stiles cutters and knives are of advanced types, designed by Taylor-Stiles engineers for specific purposes, and representing a very large investment to meet the constantly growing demand.

Figure 1

Figure 2

From the character of its products and their value to the paper industry — in fact, to industrial America in general — Taylor, Stiles & Co. is an important source of superior cutting machines and knives.

H. W. Griffin, president of Taylor, Stiles & Co., came to the organization fresh from receiving his M.E. degree from Cornell University in 1896. With him today is his son who for years was connected with the near-by Riegel Paper Corp., for which the first Taylor-Stiles rag cutter was built in 1880, when that concern was known as John L. Riegel & Son.

Building upon a foundation of sound craftsmanship, with a background of eighty-five years of continuous service, Taylor, Stiles & Co. has become the recognized leader in its chosen field of industrial cutting, its business expanding steadily, year by year, in step with that of the industries it serves.

"Giant" and "Little Giant" Cutters

Under these trade marks Taylor, Stiles & Co. have built up a line of cutting machines for the paper industry, to meet specific manufacturing requirements efficiently.

Naturally the uses made of these machines overlap in places. For instance, No. 36 and No. 11 Giant cutters are used by fine paper mills, set in tandem, to cut rags into approximately square pieces (½" to ¾" squares) before the rags are sent to rag dusters, rotary digesters, beaters, Jordans, screens, etc.

Roofing and felt paper mills use a No. 20 Multiplex machnie with which to cut rags for roofing felt, felt for linoleum, rug, and table mat base materials, etc. The special feature of these machines is a series of bed knives, past which the rags must pass and be cut into exceedingly fine pieces, which are then felted.

By rope and jute mills No. 36 and No. 11 are used, as is also another cutter, No. 10, in making stock for bags, file folders, tags, rope, etc. Cuttings are sometimes as long as 4".

Blotting paper mills use No. 36 and No. 11 rag cutters to reduce shirt cuttings, cotton batting, and other clean cotton, much as in fine paper making.

Boxboard mills use No. 11 to cut a variety of materials that includes some waste paper, string, twine, rope, and other waste.

Pulp mills make rag half stock with No. 11, and strawboard mills make "9-point chip" with No. 34 straw cutter.

There are, of course, differences in capacities, and means of changing the frequency of clips, regulated by speed relations of feed and knive cylinder, to secure any fineness or coarseness of cut material.

Perhaps in no other item of basic paper making equipment has there been so much improvement in recent years, as has been made in cutting equipment by this highly specialized organization at Riegelsville, N. J.

Naturally and inevitably other industries have come to profit by the experience and ability of Taylor, Stiles & Co. Yet today the paper industry is still one of the most important and interesting of a list that includes textiles, plastics, glue, rubber, and many others.

Figure 1 shows the board of strategy. Seated in the center is H. W. Griffin, president, while his son Alan H. Griffin looks over his shoulder. On the left is Edward H. Apgar, secretary and manager of the knife department. On the right is Edward S. Snyder, superintendent. The three seniors total 152 years of service with the company.

Figure 2 is a general view of the main machine shop. The man in the foreground and the one on his right have worked for the company 34 and 45 years respectively.

Figure 3 shows a part of the erect-

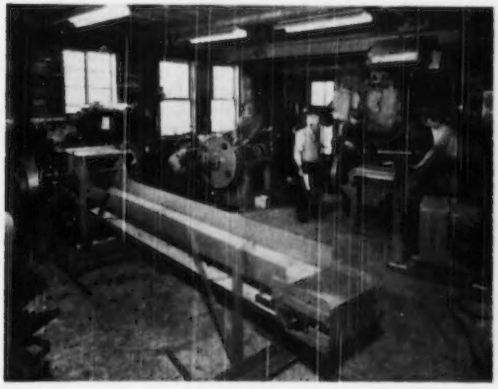

Figure 3

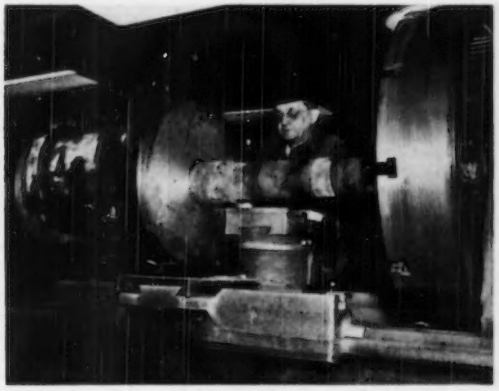

Figure 4

Figure 5

Figure 6

ing floor. The superintendent in center is surrounded by some of the younger men who are acquiring the skill and pride of accomplishment possessed by the old timers. In the foreground is a No. 36 "Giant" rag and fiber cutter, nearly completed. The machine in the center at the rear is a rag cutter that has seen 30 years of service, now being rebuilt for its original owner. They never wear out. At the right is a "Little Giant" plastic dicing cutter.

Figure 4 shows the head and shaft assembly of a No. 20 "Giant" Multiplex rag cutter, which is being finish turned in a big engine lathe. This head is a steel casting, with machine knife sections. The heavy steel plate flanges are welded on after sections are machined. The shaft is an alloy steel forging, which, after proper fitting, is forced into the steel casting with a 100 ton press.

The lathe operator in *Figure 4* has worked for the company 34 years.

Figure 5 shows the carbon steel inlay, which forms the cutting edge, being forged into the soft steel backing of a heavy knife. Taylor, Stiles & Co. uses a trip hammer for this operation while most other knife manufacturers usually depend on a drop hammer. Forging on a trip hammer gives the same effect as if struck with a hand sledge, while a drop hammer gives an effect more like pressure. The repeated blows of a trip hammer not only insure a perfect weld between the two metals, but also improve the molecular structure. The operator has been handling hot steel all his life and for the company for 14 years. Recently his value has been increased by the addition of a new forge furnace of the latest and most modern type with automatic temperature controls. He has two understudies who are rapidly acquiring the technique.

Figure 6 shows the boss grinder beveling a paper knife. The machine shown is one of several especially designed and built at a cost of about $10–12,000 per machine by Taylor, Stiles & Co., within the past three years. Natural stone is still used in grinding as it was 87 years ago. It imparts a certain quality to the cutting edge not to be obtained by artificial abrasives.

It pays to maintain these cutters in top operating condition at all times. After all, the place to "cut" rags is in the cutter, not in the beaters where hundreds of horsepower are saved when the rags are properly precut on Taylor-Stiles machines.

Maintenance requirements fall into two categories — first, servicing of the machine itself; secondly, care of the knives.

As to the machine, the important items are lubricating at regular intervals and frequent checking of the whole machine to see that all bolts and screws are drawn up tight, especially after any adjustments, such as setting of new or resharpened knives.

As for the knives, servicing requirements are summed up in one sentence: Keep them sharp. Some concerns have facilities for sharpening their own knives, or send them to local machine shops to be sharpened. Taylor, Stiles & Co. maintains a regular knife sharpening service for the convenience of customers. Cleanly cut rags reduce beater time, and, thereby, power costs also. Sharp knives cut faster and better. So keep them sharp.

Technical Knowledge Is Not Enough*

JAMES D. CUNNINGHAM[1]

We are the technical leaders of a great technical center in a nation that has won its way to world supremacy by technical mastery of its natural resources. The power over natural wealth and human destiny that is represented in this room [East Lounge, Edgewater Beach hotel, Chicago, Ill.] would have been the envy of the kings and emperors of a few hundred years ago. Surely at this pinnacle of technical power in a mechanized civilization we must be the happiest men and women the world has ever seen!

The fact is, of course, that we are nothing of the kind. Instead of that, we are confused and apprehensive. Many of us look backward with longing to a time when we were much less powerful but much more serene, and wish we could turn the clock back to that simpler, happier day. Most of us look forward fearfully to a future that is dark with bewilderment, doubt and possibilities of catastrophe. The few of us who do see, or think we see, a way out of our present difficulties know in our hearts that there is little likelihood of our way out being followed. A calendar of special days and weeks, issued by the U. S. Department of Commerce, shows American Armed Forces Day coming right in the middle of National Pickle Week! This sums up our situation with a sort of desperate humor. It couldn't be said quicker!

As we contemplate the vast social and political complexity of the world today, it has become commonplace for us to say, "Isn't it a tragedy—that we have concentrated our talents on technical problems to the neglect of human

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problems? But for most of us this is just an expression, not a real belief.

We may brood about politics and public problems but we don't do anything about them. Mostly, we see them as a somber backdrop for our own individual triumphs of technique. We think if only everybody else were as brilliant and energetic as we are, the problems would be solved.

But eventually we come to the questions that many of us keep asking ourselves more and more frequently these days? Is technical progress enough? Does it justify our activity? If not, what are the other ends or objectives we should seek?

Of course, these are not new questions. Since the beginning of our civilization, men have asked themselves these very same questions. The French philosopher, Rousseau, for example, put the question in a different and challenging form. He asked: Has the progress of science done man any real good? Obviously, we think the answer is "yes"—and yet it may be worth-while for us to examine the answer that Rousseau himself came to. He was skeptical. In Rousseau's judgment, the moral effects of science may have been so bad as to offset its physical advantages.

These are harsh words, and I doubt that many of us would acknowledge that they are true. But certainly it is a fact that skillful men are likely to become self-centered, and certainly this fact has something to do with the political and social difficulties in which we find ourselves today.

But there is another, and more important, respect in which our technical and moral interests are in conflict. I think it is fair to say that a large part of the technical mastery that we have achieved in this country has been the direct result of competition. Our customs and laws recognize the value of competition and seek to preserve it. Yet the emphasis on competition in our economic lives is in some conflict with the moral rules by which our personal lives are governed.

Is this the inevitable scourge of our efforts to conquer our environment, as Rousseau believed? Or is it rather the result of a competitive, technical interest that has become so intense that we have lost sight of other values? And can we now, by educating ourselves and our children, achieve the kind of balance of technical and spiritual forces that is essential to our happiness, if not to our survival?

I think it is encouraging that we have recognized the need and are making the effort. Our engineering and technical college faculties are awakening more and more to the need for humanizing the technical curriculum, and, what may be more significant, students themselves, in contrast to the attitude of just a few years ago, are welcoming and even demanding courses outside their chosen technical fields.

The reasoning behind these changes reflects the changing emphasis in our technical society—the awakening realization that technical know-how is not enough. As specialists, many of you may resent the implication here that you have been less than you might have been as citizens and human beings. Look what you have contributed to human comfort and well-being through your technical accomplishments! Look at the number of people you employ, and the taxes you pay, and the civic contributions you make! What is expected of a citizen and a human being that you haven't given? You may well ask, and it is a fair question.

If science has simply made man more comfortable, if it has made him stronger and sleeker, and even healthier, it has not improved him intrinsically at all, and we have done all that could be expected of us as human beings. But if science has released man from the demands of animal existence so that he may turn his energies toward moral and spiritual improvement, then the possibilities are as great as the accomplishments to date are small, and many of us have failed in our chief responsibility as citizens and human beings.

Is this just so much Sunday school talk, without any real meaning in a world of H-bombs, public debts and ward committeemen? I don't believe it is. In fact, I think it can be shown that our failure to recognize and respond to our broad responsibilities as citizens and human beings, our failure to understand that technical progress is not enough, is the key to many of our greatest difficulties in America today.

You and I hear and take part today in a lot of conversation about how we can stop the trend toward socialism in America. If I am sure of anything, I am sure that we can't stop the trend toward socialism by talking about it, or by talking about all the evils it has led to elsewhere and may lead to here. Nor is it certain that we can stop it altogether by replacing one set of elected government officials with another, however desirable that may be for other reasons, because essentially the trend arises not alone from the will of our elected and appointed officials but from the will of a people seeking justice, tranquillity and the general welfare, and not knowing how to find these desired ends.

Actually, of course, these ends cannot be achieved through socialism any more than they can be achieved through any other mere doctrine. If they can be achieved at all it must be done instead through effort. This means that we must turn some of our attention away from technical progress to insure the survival of our economic society as we know it.

There are a few hopeful signs that this is being done. Increasingly, we find the leaders of our technical society, people like yourselves, turning away from their professional and business lives and accepting responsibilities in the education and welfare activities of the community. Increasingly too, we see technical leaders assuming political responsibilities—and it is in this area, I think, that our failure as citizens has been most shameful. Until we have done this and much more, how can we expect a political system based on the sovereignty of the people to work?

Our greatest hope for the future, however, lies in the evidence of still another awakening interest in our technical society—an interest in spiritual and moral as well as technical values. Church memberships are growing as people reach out for something they are aware is missing in their lives. Books whose message is a spiritual message are on best-seller lists for the first time in our history, and this is especially important, I think—these books are in greatest demand on our college and university campuses. Here again, however, it is our technical leaders on whom we must depend to give the movement toward spirituality and strength and vigor and endurance that will make it meaningful. Can you turn aside from technical progress to contemplate the greatest and most neglected admonition that has ever been given to man: "Love thy neighbor as thyself?" If you can, we will find our way out of the difficulties we are in and any others that may come to us. If you cannot, surely we are doomed.

On the Nationalist war front in China, in a mission hospital, a nursing Sister was tenderly caring for a dirty Chinese soldier whose ugly, festering wounds were an offense to the senses. A war correspondent in the ward looked on for a moment, and said: "Sister, I wouldn't do your work for a million dollars!" The Sister looked up and smiled, then replied quietly: "Neither would I!"

Canadian Combines Investigations

OTTAWA — The Canadian Chamber of Commerce has urged that reports of combines investigations should not be published before persons charged are convicted in court. The Chamber submitting a brief to the special Canadian Government committee studying the Combines Investigation Act stating that it must oppose anything which may injure or restrain trade.

"One of the most serious defects in the present act is its uncertainty, the cause of which lies in the use of subjective words in the act itself and in decisions of the courts. There is also uncertainty as to the statute under which one will be prosecuted; the probability that the investigation will be conducted under one act and the prosecution under another."

The brief asked that parties under investigation should have access to all evidence against them, that the right of trial by jury should not be denied corporations, and stated that re-sale price maintenance is not detrimental to the public.

Patent Abstracts

● ***In addition to abstracts on the technology of pulp, paper and related industries, miscellaneous abstracts which may provide useful information are included.***

United States

2,515,202—Gas and Liquid Separator. Heyward J. Dyer, Los Angeles, Calif. Filed November 6, 1944—Issued July 18, 1950.

Apparatus of the character described including, a vertically disposed body closed at its upper end and having a transverse part defining a separator chamber in the body, said part forming the bottom of the chamber, gas and liquid separating means in the chamber including a series of like baffle plates extending around the interior of the body, the ends of adjoining plates being overlapped and spaced apart, each plate being curved in cross section and having its upper edge joined to the inner wall of the body and having its lower edge free, facing the inner wall of the body and spaced therefrom, an inlet duct conducting flow into the body and discharging into the separating means intermediate the ends of the series of plates, means conducting liquids through the bottom of the chamber, and means conducting gas from the top of the chamber.

2,515,218 — Polymerization of Rosin Using Activated Earths. Burt L. Hampton, Jacksonville, Fla., assignor, by mesne assignments, to The Glidden Company, Cleveland, Ohio. Filed September 21, 1946—Issued July 18, 1950.

The method of polymerizing rosin which comprises the step of treating said rosin in liquid phase at temperatures between about 50° C. and 155° C. in the combined presence of about .2% to 5% of hydrohalic acid selected from the group consisting of hydrochloric acid and hydrobromic acid and an amount of between about .2% and 20% of an earth selected from the group consisting of fuller's earth, bentonite, rottenstone, montmorillonite, New Jersey clay, and bauxite, said treatment being carried out for at least one hour until substantial increase in the melting point of the rosin has been effected.

2,515,232 — Water-Detecting Paper and a Water-Detecting Coating Composition. Morris S. Kantrowitz and Earl J. Gosnell, Washington, D. C. Filed December 31, 1946—Issued July 18, 1950.

A coating composition adapted to detect the presence of water thereon consisting of an organic dyestuff which is relatively colorless in thin layers but which develops strong coloration in contact with moisture, having incorporated therewith a drying oil, a cellulose plastic of the class consisting of cellulose lower alkyl ethers and cellulose lower alkanoates, and an organic mutual solvent for said drying oil and said plastic, said solvent being incapable of substantially developing the tinctorial characteristics of said dyestuff.

2,515,443—Vapor Generator. George D. Ebbets, Kenilworth, N. J., assignor to The Babcock & Wilcox Company, Rockleigh, N. J. Filed November 16, 1944—Issued July 18, 1950.

A vapor generating section comprising an upper drum and a lower drum having longitudinal axes in substantially the same vertical plane, upright tubes connected at upper and lower ends to said drums and forming a forward and a rearward tube bank horizontally spaced from said plane at opposite sides, a baffle extending from one of said drums toward the other of said drums adjacent the front of said forward bank and defining a gas inlet thereto adjacent said other drum, a plate-like stiffener member extending toward said baffle across tubes of said forward bank and terminating intermediate the height of said baffle in spaced relation thereto, a separate plate-like stiffener member extending across tubes of said rearward bank, and baffle means including said members for directing gases from said inlet over said banks or tubes.

2,515,529 — Corrosion Inhibiting Compositions and Method. John W. Ryznar, La Grange Park, and Marjorie A. Peich, Chicago, Ill., assignors to National Aluminate Corporation, Chicago, Ill. Filed July 22, 1946—Issued July 18, 1950.

A corrosion inhibiting composition comprising essentially a water soluble polyphosphate and a water soluble inorganic complex cyanide, the ratio of said cyanide to said phosphate being within the range of 0.05 to 0.5 by weight of said phosphate, and said composition being capable of dissolving in water to give a dissolved phosphate concentration within the range of 0.1 grain per gallon to 5 grains per gallon of water and a dissolved cyanide concentration within the range of 0.05 grain per gallon to 0.5 grain per gallon of water.

2,515,739—Method of Treating Tall Oil. Jerry John Smerechniak and George William Barlow, Stamford, Conn.; said Smerechniak now by change of name Jerry J. Sherwood; assignors to American Cyanamid Company, New York, N. Y. Filed March 6, 1947—Issued July 18, 1950.

A process for treating a composition containing tall oil fatty acids to improve its color and odor which comprises heating said composition with metallic zinc at a temperature of from about 150°-275° C., the amount of metallic zinc used varying from about 0.1% to about 2.5% by weight, based on the weight of tall oil.

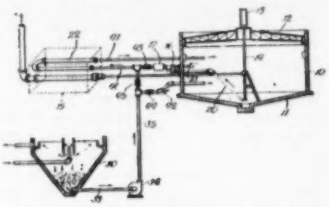
2,515,834 — Cellulose Filaments and Method of Producing Same. William D. Nicoll, Wilmington, Del., assignor to E. I. du Pont de Nemours & Company, Wilmington, Del. Filed November 13, 1942—Issued July 18, 1950.

A regenerated cellulose filament having a non-uniformity of structure between the exterior and interior portions of the filament and having a difference of structure occurring across the filament, said filament having the characteristic, when straight, of spontaneously crimping upon being suspended, free of tension, in an aqueous liquid.

2,515,882—Liquid Sampling Device. Oliver E. McClusky, Beaumont, Tex. Filed October 27, 1947—Issued July 18, 1950.

In a liquid sampling device, the combination with an elongated open ended container adapted to be lowered into a tank of liquid to be sampled, of valve means for closing one end of said container on immersion of the latter in the liquid to a predetermined depth, said valve means comprising a valve body secured to said container and having a port communicating with the container end, said valve body being formed to provide a slot extending transversely of the axis of the port, said slot being open at both ends, a valve carrier supported for displacement in and lengthwise of said slot, a valve plate pivotally supported on said carrier for rocking movement with respect thereto, said valve plate being movable lengthwise with said carrier into port closing position, the base of said slot being inclined toward said port in the direction of port closing movement of said carrier, whereby said plate is wedged against said port as said carrier is so moved, spring means for urging said carrier toward port closing position, and releasable latch mechanism for retaining said carrier in port opened position.

2,516,076 — Method of Digesting Sewage Sludge or Trades Wastes. Harry E. Schlenz, Glencoe, Ill., assignor to Pacific Flush Tank Company, Chicago, Ill. Filed December 9, 1944—Issued July 18, 1950.



The method of biologically digesting sewage sludge or trades waste material containing digestible organic components which comprises introducing material to be digested into a digestion zone containing micro-organisms capable of digesting said components, circulating material from the digestion zone at a predetermined velocity along a closed path of substantially uniform cross section through and in heat transfer relation with a heating zone externally of any digestion zone to heat the material to above the optimum temperature for digestion by said micro-organisms and returning the heated material to the digestion zone at a sufficient rate to maintain the digesting mass at substantially the optimum temperature for digestion by said micro-organisms.

2,516,113 — Method of Producing Viscose Having an Opacifying Agent. Kenneth Russell Gray, Shelton, Wash., assignor to Rayonier Incorporated, Shelton, Wash. Filed November 27, 1945—Issued July 25, 1950.

In the production of viscose having an opacifying agent dispersed therein the improvement which comprises shredding alkali cellulose formed of wood pulp having ether extractable saponifiable and unsaponifiable matter therein, the unsaponifiable matter being water insoluble, oil soluble, interfacially active and consisting of a portion naturally present in the pulp and a portion added as an hydroxyl substituted hydrocarbon selected from the group consisting of an aliphatic hydroxyl substituted hydrocarbon having at least 10 carbon atoms and a cycloaliphatic hydroxyl substituted hydrocarbon having at least 10 carbon atoms, the total amount of unsaponifiable matter not exceeding 0.07% based on the bone dry weight of the wood pulp, whereby in the subsequent processing into viscose said opacifying agent is dispersed in the viscose without objectionable scum formation.

2,516,384 — Mechanically Curling Cellulose Fibers. Harold Sanford Hill, Kenogami, Quebec, and Joseph Edwards, Riverbend, Quebec, Canada. Filed November 25, 1944—Issued July 25, 1950.

The method of processing papermaking pulp which comprises dewatering an aqueous suspension

IF YOU HAVE A

stream pollution PROBLEM

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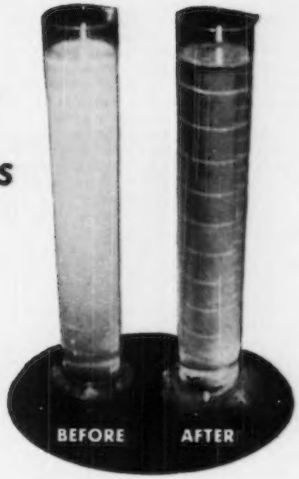
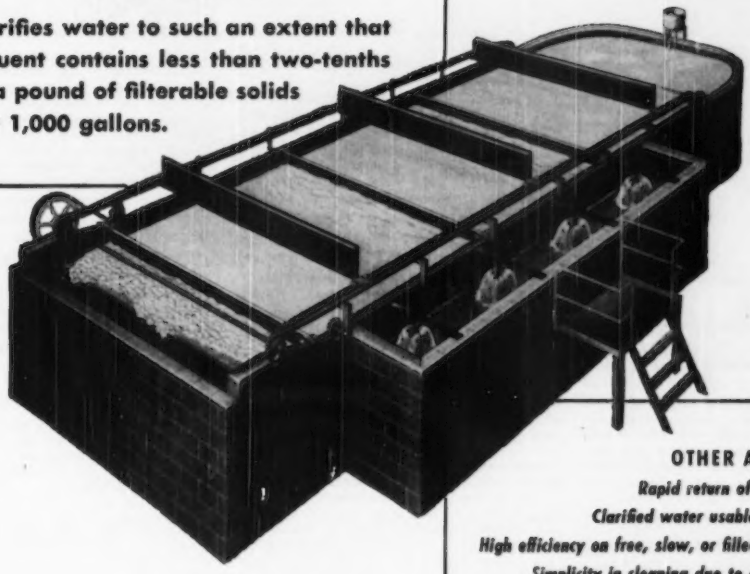


SVEEN PEDERSEN

FLOTATION

SAVEALL

Clarifies water to such an extent that effluent contains less than two-tenths of a pound of filterable solids per 1,000 gallons.



OTHER ADVANTAGES:

Rapid return of recovered fibers.

Clarified water usable in many places.

High efficiency on free, slow, or filled stock furnishes.

Simplicity in cleaning due to open construction.

Low maintenance costs—no screens, few moving parts.

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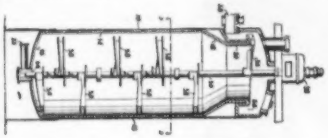
of pulp fibres to high consistency, working the pulp into the form of small, moist, discrete, crumb-like nodules in which the fibres are randomly intertwined, compressing the nodules between opposed working surfaces which are roughened to provide traction for the nodules without obstructing rolling traverse of the nodules on the surfaces, and rolling the nodules transversingly on the surfaces while changing continually the direction in which the nodules traverse the surfaces and while keeping the nodules under compression, thereby to reorient the nodules continually with reference to the direction of compression.

2,516,444—Treated Paper Parachute. Ralph Anzalone, Baldwin, N. Y., assignor to Leonard P. Frieder, New York, N. Y. Filed November 17, 1945—Issued July 25, 1950.

A paper parachute including a paper canopy, adapted to be tightly packed in a folded condition without damage by such folding and packing and without deterioration in strength at the folds after being kept in said folded condition, and adapted to unfold freely for use, said paper canopy being uniformly impregnated throughout its extent with a substantially predetermined amount of glycerine, the amount of glycerine per unit area of the paper and the uniform distribution of the glycerine throughout the paper being equivalent to the amount and distribution of glycerine which would remain in the paper after first saturating it with a solution consisting of from about 1 to about 4½ parts of glycerine and 100 parts of commercial ethyl alcohol by applying to the paper more of such solution than sufficient to effect substantially complete saturation and mechanically removing the solution in excess of saturation, and then evaporating the alcohol from the paper.

2,516,447—Method and Apparatus for Chemical Treatment. Elmer R. Burling and John P. Rich, Nashua, N. H. Filed February 24, 1947—Issued July 25, 1950.



A method of treating pulp comprising: continuously advancing a pulp slurry vertically upward along a cylindrical path; subjecting all pulp arriving at a predetermined level to a slow, positive, continuous, smooth, radially outward displacement by causing said pulp to flow along a substantially cycloidal path and reflecting from the boundary of said cylindrical path the pulp thus radially outward displaced in a radially inward direction to drive before it other pulp immediately above and below said level, said inward and outward displacements being continuous and uninterrupted whereby to minimize agitation between mutually adjacent fibers.

2,516,548—Production of Anatase Titanium Dioxide Pigments. Winfred J. Cauwenberg, Piney River, and Charles A. Tanner, Jr., Amherst, Va., assignors to American Cyanamid Company, New York, N. Y. Filed September 25, 1945—Issued July 25, 1950.

A method of producing anatase titanium dioxide pigments of improved tinting strength which comprises roasting a titanium sulfate hydrolysate containing a small amount of an alkali metal compound at a temperature and for a time sufficient to convert the hydrolysate to small anatase crystals but insufficient to develop pigment properties therein and then removing the alkali metal from the anatase titanium dioxide and calcining it at temperatures of about 900° C. to 1050° C. in the presence of a quantity of phosphate corresponding to at least 0.4% and not more than about 0.8% of P_2O_5, based on the weight of the titanium dioxide.

Canadian

466,792—Stabilization of Rosin Sizes. Edward N. Poor, Stamford, Connecticut, U.S.A., and Kenneth L. Howard, Westfield, New Jersey, U.S.A. assignors to American Cyanamid Company, New York, New York, U.S.A. Filed February 18, 1946—Issued July 25, 1950.

A method of stabilizing aqueous rosin size solutions against crystallization which comprises incorporating therein stabilizing amounts of a crystallization inhibitor comprising a mixture of approximately equal quantities of formaldehyde and an amine.

A method of stabilizing aqueous liquid rosin size solutions against crystallization which comprises incorporating therein stabilizing amounts of a crystallization inhibitor comprising a mixture of approximately equal quantities of formaldehyde and an aliphatic amine.

A method of stabilizing aqueous liquid rosin size solutions against crystallization which comprises incorporating therein stabilizing amounts of a crystallization inhibitor comprising a mixture of approximately equal quantities of formaldehyde and a member of the group consisting of primary and secondary aliphatic amines and cycloaliphatic amines.

An aqueous liquid rosin size composition stabilized against crystallization by the incorporation therein of stabilizing amounts of a crystallization inhibitor comprising a mixture of approximately equal quantities of formaldehyde and an amine.

466,815—Method and Apparatus for Producing Chlorine Dioxide. William Howard Rapson and Morris Wayman, Hawkesbury, Ontario, Canada, assignors to Canadian International Paper Company, Montreal, Quebec, Canada. Filed April 5, 1946—Issued July 25, 1950.

A continuous process for the production of gaseous chlorine dioxide by the reaction between gaseous sulphur dioxide and an aqueous solution of a metallic chlorate, consisting in the steps of supplying a continuous stream of an aqueous solution of a metallic chlorate to a packed reaction column at such a rate as to distribute said aqueous chlorate solution over the surfaces of the packing in said reaction column, countercurrently supplying a continuous stream of gaseous sulphur dioxide and an inert diluent gas to said reaction column to bring said sulphur dioxide into contact with the surface of the aqueous chlorate solution distributed over the packing in said column, employing a heat exchanging medium to cool said packed column in the zone of greatest reaction, continuously moving said heat exchanging medium along said packed column from the zone of greatest reaction to the zone of efflux of spent liquor whereby to transfer heat from said first zone to said second zone, and continuously withdrawing from said reaction column a gaseous mixture containing chlorine and said inert diluent gas.

466,816—Method for Removing Chlorine from Mixtures Containing Chlorine Dioxide and Chlorine. William Howard Rapson and Morris Wayman, Hawkesbury, Ontario, Canada, assignors to Canadian International Paper Company, Montreal, Quebec, Canada. Filed April 5, 1946—Issued July 25, 1950.

In a process for the removal of chlorine from a gaseous mixture containing chlorine dioxide, chlorine and water vapour, the step of adding to said gaseous mixture gaseous sulphur dioxide.

A continuous process for removing chlorine from a gaseous mixture containing chlorine dioxide, chlorine, and water vapour comprising continuously introducing a stream of said gaseous mixture into a reaction chamber, constantly adding gaseous sulphur dioxide to said gaseous mixture in said reaction chamber at a rate sufficient to react with the chlorine in said mixture in the presence of water to remove the chlorine therefrom without substantially decreasing the amount of chlorine dioxide contained in said mixture, and continuously withdrawing from said reaction chamber a gaseous mixture containing chlorine dioxide substantially free from chlorine.

A continuous process for removing chlorine from a continuously flowing gaseous mixture containing chlorine dioxide and chlorine, consisting in constantly adding gaseous sulphur dioxide to said gaseous mixture whereby said chlorine and sulphur dioxide will react to remove said chlorine from said mixture without substantially decreasing the amount of chlorine dioxide contained therein.

466,875—Bag Filling Devices. Edric W. Vredenburg, Berkeley, California, U.S.A., assignor to St. Regis Paper Company, New York, New York, U.S.A. Filed June 30, 1947—Issued July 25, 1950.

In a device of the character described, a weighing frame, a container support platform on said frame and including container support means yieldably mounted on said platform, a shaft rotatably mounted on said platform and having an eccentric thereon, and a member depending from said support means to beneath said eccentric for engagement therewith, and resilient means urging said support means in a direction to retain said depending member in engagement with the eccentric.

466,876—Infusion Package and Method of Making Same. Thomas Russel Baxter, Mt. Vernon, Ohio, U.S.A., assignor to Standard Brands Incorporated, New York, New York, U.S.A. Filed May 18, 1943—Issued July 25, 1950.

A tea bag, which comprises a sealed web of filter material adapted to hold a quantity of tea, said web being highly permeable and formed of closely interlaced cellulosic fibres and said fibres being bonded by lines of a non-toxic, substantially odourless and tasteless, hot water-repellent lacquer.

466,880—Treatment of Waste Sulphite Liquor. Karl H. A. Melander, Gothenburg, Sweden, and Göte E. Savo and Tage I. Johanson, Göta, Sweden, assignors to Sulfitaktiebolaget Göta, Sweden. Filed April 29, 1943—Issued July 25, 1950.

In the process of recovering an alkali lignin sulphonate from sulphite waste liquor wherein the latter is treated with lime to produce a precipitate of calcium lignin sulphonate and the latter is then separated from the liquor, the improvement which comprises adding an alkali metal sulphate to said precipitate of calcium lignin sulphonate in the presence of water to convert the calcium lignin sulphonate to the corresponding alkali metal lignin sulphonate, acidifying the mixture with sulphurous acid to produce a precipitate of calcium sulphate and separating the latter from the resulting solution of alkali metal lignin sulphonate.

SUPPLIERS

Robert M. Alderson, above, heads the new Chicago office of the Irvington Varnish & Insulator Co.

Ajax Flexible Coupling Co., Inc., has appointed three new representatives. The Samson Sales Co., operated by Elmer D. Samson, 420 Market street, San Francisco, Calif., will represent Ajax Flexible Couplings, Ajax Shaler-Shakers and Ajax Lo-Veyors in Northern California. J. S. (Steve) Thurlow, manager of the Thurlow Equipment Division of G. Donald Bradley Co., 4402 White Building, Seattle, Washington, will cover the states of Washington, Oregon and Idaho, on all Ajax products except Flexible Couplings.

Bjorksten Research Laboratories, Inc., Chicago, announce the purchase of a 168-acre tract of land immediately outside the city of Madison, Wis., which will be used for erection of buildings to house new testing units, scientific equipment and laboratories.

American Lignite Products Co. is producing montax wax from lignite coal mined in the Buena Vista area, Ione, Calif. The mineral is used in manufacture of carbon paper and waterproofing material among other products. The plant, badly damaged by fire late in 1949, has been rebuilt and enlarged, and is reported to be the lone montax producer in the nation. American Lignite Products is a unit of De Angelis Coal Co. which operates several coal mines in Pennsylvania.

Infilco Inc., designers and manufacturers of water conditioning, sewage disposal and waste treating plants, has announced the relocation of its Research, Development and Engineering Divisions, as well as its general offices. On and after September 1, 1950, these departments and offices will be located in Tucson, Ariz. They will occupy temporary quarters at 2750 South Twelfth avenue while a new building is being erected to house Infilco's expanding operations.

Manufacturing, chemical laboratories, advertising and certain phases of engineering will continue in the present Chicago plant at 325 W. 25th Place, utilizing the vacated space to enlarge their activities.

Plans are already under way to increase the staffs of the New York and Chicago sales engineering offices, as well as to locate field engineers in additional cities to provide for prompt service in all parts of the country.

The Permutit Co. of New York announces that it has acquired from the American Cyanamid Co. its ion exchange business and the trademark "Ionac." These materials will be manufactured and distributed by Permutit's subsidiary, The American Zeolite Corp.

Smart Heads Gurley

TROY, N. Y.—Charles E. Smart has been elected president of W. & L. E. Gurley, Troy, 105-year-old manufacturers of engineering and surveying instruments.

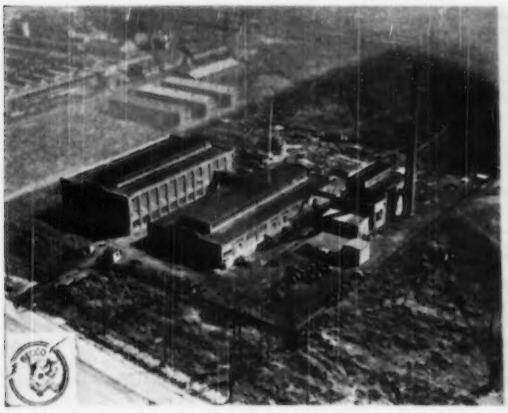
Charles E. Smart

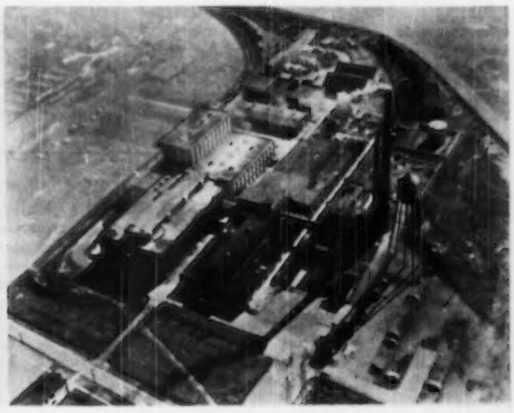
Mr. Smart joined Gurley as works manager in 1920 and became a director in 1926. In 1945 he was elected secretary, the office he held until his election as successor to C. I. Day, who died in June. Lester C. Higbee, general sales manager, has been elected secretary. He has been with the company since 1915, serving successively as production engineer, office manager, salesman, advertising manager, development engineer and sales manager.

Lynch Corp., Packaging Machine Division, Toledo, Ohio, has announced the following promotions: F. G. (Hap) Lenhart assumes duties as sales engineer for the Eastern territory and R. N. Craven as sales engineer for the Mid-Eastern territory. Paul D. Fromer succeeds Mr. Craven as service manager. All three men will have their headquarters in Toledo.

25 Years of Progress

Buffalo Electro Chemical Co. celebrates its Silver Anniversary as one of primary producers of Hydrogen Peroxide. The picture at the left is an airplane view of the plant as established. An airplane view of today's plant is shown at right.





FINANCIAL RECORD

PREFERRED STOCKS	Per Share Earnings Calendar Year 1949	Per Share Earnings 12 Mo. to Approx. 6/30/50	Indic. Annual Divid. Rate	Aug. 29 Approx. Market Price
Armstrong Cork Co. $3.75 Cum.	$40.93*	$ —	$3.75	$101¾
Armstrong Cork Co. $4.00 Cum. Conv.	40.93*	—	4.00	112⅜
Celotex Corp. 5% Cum.	6.80c	8.27g	1.00	16⅛
Champion Paper & Fibre $4.50 Cum.	60.09f	89.39	4.50	104⅞
Container Corp. of Amer. 4% Cum.	89.52	104.60	4.00	102½
Crown Zellerbach $4.20 Cum.	54.38c	55.88g	4.20	103⅞
Dixie Cup Co. $2.50 Cum. Conv. Cl. A	10.93	12.14	2.50	54¼
Flintkote Co. $4 Cum.	62.70	71.81	4.00	108⅜
Robert Gair Co., Inc. 6% Cum.	13.79†	15.86†	1.20	18
International Paper Co. $4 Cum.	224.55	264.19	4.00	108
Kimberly Clark Corp. 4½% Cum.	85.27	117.03i	4.50	106
MacAndrews & Forbes 6% Cum.	61.59	62.97	6.00	141½
Mead Corp. 4¼% Cum.	51.37	82.87a	4.25	92⅜
Mead Corp. 4% Cum. Conv. 2nd	21.35*	27.76a	2.00	50½
Paraffine Cos. Inc. 4% Cum. Conv.	59.81j	....	4.00	99
Rayonier Inc. $2 Cum.	9.54	10.03e	2.00	33¾
St. Regis Paper Co. 4.40% 1st A	30.74	36.61	4.40	94½
Scott Paper Co. $3.40 Cum.	51.15*	62.16*	3.40	100⅞
Scott Paper Co. $4.00 Cum.	51.15*	62.16*	4.00	106⅜
Sutherland Paper 4½% Conv.	46.92	59.24	4.25	114
U. S. Gypsum Co. 7% Cum.	283.37	340.24	7.00	185
United Wallpaper Inc. 4% Cum. Conv.	2.14	(d)8.00e	2.00	24½
West Virginia Pulp & Paper 4½% Cum.	61.28c	61.06i	4.50	108½
COMMON STOCKS				
APW Products Co.	(d)0.81	(d)0.01	—	5
American Writing Paper Corp.	.04	0.50	—	7⅜
Armstrong Cork Co.	6.57	—	$3.00	44¼
Celotex Corp.	1.65c	2.06g	1.00	15⅞
Certain-Teed Prods. Corp.	2.84	3.24	1.00	16½
Champion Paper & Fibre	5.15f	8.16	2.00	38⅜
Congoleum Nairn Co.	3.04	2.70	2.00	23¼
Container Corp. of America	8.46	9.62	4.00	49¼
Crown-Zellerbach	6.02c	6.12g	2.00	38⅛
Dixie Cup Co.	7.44	8.58	1.54	42½
Eastern Corp.	0.04	1.64	(h)	15⅜
Flintkote Co.	4.33	4.95	2.50	25½
Robert Gair Co., Inc.	2.11†	2.30†	0.70	9
Great Northern Paper Co.	4.87	3.75	2.80	42¼
International Paper Co.	7.12	8.14	2.50	54⅜
Johns-Manville Corp.	4.83	6.16	2.50	41⅜
Kimberly Clark Corp.	5.29	6.66i	1.80	38
MacAndrews & Forbes Co.	3.64	3.77	3.00	40⅝
Marathon Corp.	3.29c	4.15i	1.40	31⅜
Mead Corp.	4.10	5.57a	1.60	25⅜
National Container Corp.	0.95	1.34	0.60	9⅛
Paraffine Cos. Inc.	0.90j	....	0.60	15⅝
Rayonier, Inc.	4.75	5.06e	2.00	37⅜
Ruberoid Co.	8.72	9.06	3.25	50⅜
St. Regis Paper Co.	0.91	1.11	0.60	10⅛
Scott Paper Co.	6.07	7.38	3.60	44⅛
Sutherland Paper Co.	4.62	5.64	2.25	43½
Union Bag & Paper Corp.	5.01	5.16	2.25	34⅛
United Board & Carton	(d)1.61b	(d)0.84g	—	12
U. S. Gypsum Co.	13.51	16.29	9.00	106¾
United Wallpaper	(d)0.01	(d)0.32e	—	2⅞
West Virginia Pulp & Paper	8.58c	8.36i	3.00	64½

(a) 12 months to approximately 6/15/50
(b) Year ended 11/13/49
(c) Year ended 1/31/50
(d) Deficit
(e) 12 months to 3/30/50
(f) 9 months to 12/31/49
(g) 12 months to approximately 4/30/50
(h) Declared 25c payable Sept. 1, 1950.
(i) 12 months to 7/31/50
(j) Year ending June 30, 1950.
(*) Earnings per combined preferred shares.
(†) Includes domestic and Canadian subsidiaries and 60% equity in Southern Paperboard Corp.

Diamond Match Co. six months' net profit amounted to $2,678,258, equal to $2.43 a common share, compared with $1,826,121, or $1.43 a share, last year. Common share earnings are based on participating provisions of preferred and common shares.

Great Northern Paper Co. and wholly-owned subsidiaries report six months net profit of $1,732,335, equal to $1.74 a share, compared with $2,851,845, or $2.86 a share last year. Net profit is before appropriation of $100,000 in each period for estimated excess cost of replacement of pulpwood inventories involuntarily liquidated in prior years. These appropriations were charges against earned surplus.

International Paper Co.'s common stock Canadian holders may be free of income tax in regard to its 25 percent stock dividend. The Income Tax Act provides that, as far as Canadian residents are concerned, stock dividends are not taxable when paid by a nonresident corporation, more than 50 percent of the share capital of which belongs to nonresidents. However, it is pointed out that this may be dependent upon individual ruling by the income tax department since each case may have to be adjudged upon its own merits.

Puget Sound Pulp & Timber Co. declared the regular quarterly dividend of 25 cents a share on the common stock, and an extra dividend of 25 cents a share, payable September 22 to stockholders of record September 5, 1950. Including this payment, a total of $1 a share has been distributed thus far in 1950.

Sutherland Paper Co. ordered an extra of 25 cents and regular quarterly of 50 cents on the common, both payable September 15.

Fighting Paper Wanted

Invitations for Bids have been issued by the New York Quartermaster Procurement Agency, 111 East 16th street, New York 3, N. Y., on QM-30-280-51-138, covering Paper, Bond, Unpunched, 50 percent Rag, Sub. 16, White, Size 8 x 10½" and 8 x 13", 5,050 reams; and Paper, Manifold, 25 percent Rag, Unpunched, Sub. 9, White, Size 8 x 10½", 5,000 reams. Bids will be opened September 14, 1950, at 1:30 P.M. (EDST) at the New York Office. Delivery Schedule: To be completed by October 30, 1950. This procurement is for the U. S. Navy.

QM-30-280-51-147, covering Paper: offset, uncoated white, size 35" x 45", 200 reams. Bids will be opened September 18, 1950, at 11:00 a.m. (EDST), at the New York office. Delivery schedule: Bidder to state best possible delivery date he is in a position to offer. This procurement is for the U. S. Army.

QM-30-280-51-131, covering Items 1 and 2 — Board, Bristol: smooth, 25 percent R.G. or 100 percent sulfite white, 3- and 4-ply, 159,000 sheets. Item 6 — Paper: drawing, unmounted, medium cream, slightly grained surface, white, 2,532 dozen. Item 7 — Paper: gummed, white, English finish, dextrine gumming, 600 gross. Item 8 — Paper: map, lithographic finish, sulphite, white, 650 reams. Item 12 — Paperboard: road sign, plain, white, 400,000 each. Item 13 — Paperboard: road sign, white, reflectorized, 150,000 each. Bids will be opened September 19, 1950, at 2:30 p.m. (EDST), at the New York office. Delivery schedule: To be completed by November 30, 1950. This procurement is for the U. S. Army.

QM-30-280-51-189, covering Items 2 and 3 — Paper: map, lithographic finish, sulphite, 600 reams. Items 8 and 9 — Paperboard: road sign, 120,000 each. Bids will be opened September 5, 1950, at 1:30 p.m. (EDST), at the New York office. Delivery schedule: To be completed by October 15, 1950. This procurement is for the U. S. Army.

PRICES

The prices below reflect general market quotations at the mill level on the standard grades in which the normal volume of business is being done. Does not include occasional spot offerings.

NEW YORK
Delivered Ports

Standard News, per ton—

Rolls, contract	$100.00/ —
Sheets	115.00/ —

F.o.b. Mills. Carload freight allowed, dock N. Y.

Kraft— per cwt., 40# base wgt.

Standard Wrapping Rolls	$6.75/$7.00
No. 1 Wrapping Rolls	7.50/ 8.00
Standard Bag	6.50/ 6.75

Tissues—per ream 24x36 (480) 10 lbs. 2500 lbs. or more

Wh. No. 1 Frd.	‡ $1.40 / 1.55
Wh. No. 1 MG	‡ 1.40 /
Wh. No. 1½	‡ 1.30 / 1.35
Wh. No. 2	‡ 1.15 / 1.20
Kraft Non-Tar	‡ 1.25 /
White Non-Tar	‡ 1.52½/

‡ Pricelists withdrawn by mills.

Toilet— per case of 100 rolls—1 M sheets

Unbleached 4½x4½	$5.90/ —
Unbleached 4½x5	5.85/ —
Bleached 4½x4½	7.10/ —
Bleached 4½x5	8.80/ —

Per Case of 50 rolls—2000 sheets

Unbleached 4½x4½	$5.90/ —
Bleached 4½x4½	6.95/ —

Per Case of 100 rolls—1000 sheets

Facial, 4½ x 5, 2 ply	$8.95/$9.45

Paper Towels—per case of 3750.

Wh. Jr. M'tif'd 9¼x9½	$5.25
Br. Sr. M'tif'l 10x12	3.60
Br. Jr. M'tif'd 9½x9¾	3.10
Br. Jr. Sgl. fold 10x10¾	3.15
Blchd. 7½ x 11, 24/25 rolls	$3.95/$6.25

Manila, per cwt.

No. 1 Jute Tag sheets*	$15.55/$17.55
Reg. Jute M.F. 40-lb., sheets*	14.00/ 16.00
Wrapping Manila	8.75/ 10.50
Printing Manila	10.00/ 11.00

* Less usual allowance for rolls.

WORLD WOOD PULP MARKETS
Third Quarter Contract Price, Per Short Air-Dry Ton
Delivered, with varying freight allowance

	U. S.	Canadian	On dock Atlantic Ports: Swedish	Finnish	Norwegian
Groundwood	$65.00/ 70.00	$70.00/ —			
Sideruns Pulping News	$65.00/ 66.50	65.00/ 66.00			
Soda, Bleached	120.00/122.00	122.00/ —			
Sulphate, Bleached	122.00/143.00	131.00/ —	*130.00/137.00†		*129.00/ —
Sulphate, Unbl'd North'n		95.00/105.00	*90.00/ 97.50†		
Sulphate, Unbl'd South'n	90.00/ 95.00			* In Competitive range	Competitive
Sulphite Blchd. (S'ftw'd)	122.00/125.00	125.00/ —	*125.00/128.00†		
Sulphite, Blchd. (H'dw'd)	120.00/ —				
Sulfite, Semi-blchd.	112.00/ —				
Sulphite, Unbleached		107.00/ —	107.00/110.00†		
Sulphite, Unbl'd (Glassine)		110.00/ —	111.00/ — †		

* On dock. † Delivered.

Gummed Tape—per bdl., 500 bdls. or more.

90-lb. 375 ft. GSI	$5.70/ —
60-lb. 600 ft. GSI	5.70/ —
35-lb. 800 ft. GSI	6.54/ —
35-lb. 500 ft. GSO	4.89/ —

Boards, per ton—*

Filled News	‡ $85.00/$92.50
Plain Chip	‡ 82.50/ 90.00
Blchd. Mla. L-d. Chip	110.00/125.00
White Pat. coated .020	127.50/130.00
Kraft Liners 42 lb.	105.00/ —
Kraft Corr. .009	110.00/ —
Binders Boards	120.00/124.00

‡ Pricelists withdrawn by mills.

The following prices are representative distributors' resale prices:

Rag Content Bonds and Ledgers—
White, 20 lb.

Bonds

	4 Ctns. per cwt.
100% Rag Ex. No. 1	$57.55/$59.45
100% Rag	50.65/ —
75% Rag	39.20/ 39.30
50% Rag	32.35/ —
25% Rag	27.70/ —

Ledgers

	4 Ctns. per cwt.
100% Rag Ex. No. 1	$60.15/ —
100% Rag	51.90/ —
75% Rag	40.45/ 40.55
50% Rag	32.35/ 33.65
25% Rag	29.00/ —

Sulphite Bonds and Ledgers
White, 20 lb.

Bonds

	4 Ctns. per cwt.
Watermarked	$18.15/$19.00
Plain	17.10/ 17.45

Ledgers

	4 Ctns. per cwt.
Watermarked	$20.15/$20.30
Plain	‡ 18.55/ 18.75

White Book
Conversion Coated

	Case per cwt.
No. 1	$21.65/$21.75
No. 2	20.15/ 20.40
No. 3	19.65/ —
Sl. grey coated	
No. 1	$16.90/ 17.15
No. 2	14.90/ 15.15
Unsorted	
No. 1 Antique (Watermarked)	$17.15/ 18.65
Offset	16.15/ 16.90
A Grade E. F.	16.15/ —
A Grade S. C.	16.65/ 16.90
B Grade E. F.	15.40/ —
B Grade S. C.	16.15/ —

‡ Indicates a price change.

WASTE PAPER MARKET

The following quotations were gathered from major dealers in each market. They are an indication of the price range in which volume tonnage was moving on the date specified. Spot offerings or special packings are not necessarily included. Prices to mills, per ton, f.o.b. cars shipping point (includes brokers' fee.) ALL PRICES NOMINAL.

	New York	Philadelphia	Boston	Chicago
	Aug. 29	Aug. 10	Aug.18	Aug.18
No. 1 Mixed Paper	$16.00/ 18.00	$16.00/ 18.00	$16.00/ 17.00	$17.00/ —
Boxboard Cuts	14.00/ 20.00	16.00/ 18.00	14.00/ —	21.00/ —
Mill Wrappers	20.00/ 29.00	28.00/ 30.00	17.00/ —	19.00/ —
No. 1 News	23.00/ 24.00	21.00/ 23.00	21.00/ 22.00	25.00/ —
Over-issue News	25.00/ —	26.00/ 28.00	17.00/ 20.00	28.00/ —
Corrugated Containers	33.00/ 35.00	32.00/ 35.00	32.00/ 35.00	35.00/ —
New Corrugated Cuts	28.00/ 40.00	35.00/ 40.00	35.00/ 40.00	40.00/ —
Double Kraft Ld. Corr. Cuts	55.00/ —	55.00/ 58.00	45.00/ 60.00	60.00/ *
Used Kraft Bags	42.50/ —	55.00/ 58.00	40.00/ —	0.00/ —
No. 1 Brown Kraft Paper	42.50/ —	45.00/ 50.00	45.00/ —	40.00/ —
Super Resorted Br. Kraft	50.00/ —	55.00/ 60.00	50.00/ 60.00	50.00/ —
New Br. Kraft Env. Cuts	90.00/ —	80.00/ 85.00	85.00/100.00	75.00/ —
New Br. Kraft Cuts	58.00/ 65.00	75.00/ 80.00	60.00/ 75.00	70.00/ —
No. 1 Gdwd Shvs.	35.00/ —	35.00/ 45.00	40.00/ —	35.00/ —
White Newsblanks	60.00/ 65.00	60.00/ 65.00	55.00/ 65.00	50.00/ —
No. 1 Flyleaf Shvs.	45.00/ —	45.00/ 50.00	50.00/ —	50.00/ —
No. 1 Soft Wht. Shvs.	100.00/115.00	110.00/120.00	90.00/105.00	90.00/ —
Super Soft Wht. Shvs.	125.00/127.00	120.00/130.00	100.00/115.00	100.00/ —
Hd. Wht. Shvs.	120.00/130.00	135.00/140.00	120.00/135.00	115.00/ —
Hd. Wht. Env. Cuts	140.00/150.00	150.00/165.00	140.00/150.00	125.00/ —
New Manila Env. Cuts	80.00/ 90.00	nominal	80.00/ 90.00	70.00/ —
Col. Tab Cards	55.00/ —	55.00/ 65.00	50.00/ 55.00	45.00/ —
Manila Tab Cards	85.00/ —	110.00/120.00	90.00/100.00	85.00/ —
No. 1 Mixed Ledger	50.00/ —	50.00/ 55.00	45.00/ 55.00	45.00/ —
White Ledger	65.00/ 70.00	70.00/ 75.00	65.00/ 75.00	60.00/ —
Mixed Books & Mags.	20.00/ —	30.00/ 35.00	25.00/ 30.00	20.00/ —
No. 1 Rep'd Hvy. Books & Mags.	35.00/ —	40.00/ 45.00	40.00/ —	33.00/ —

* f.o.b. or delivered.

Rag Market

New Domestic Cotton Cuttings
(Prices to Dealers, F.o.b. Ship. Pt.)
ALL PRICES NOMINAL

White Shirt	$14.00/$14.50
Unbleached Muslin	14.00/ 14.50
Light Silesias	8.00/ 9.00
White Black Blue Overalls	9.00/ 10.00
Blue Overalls	5.00/ 5.25
Fancy Shirt	5.00/ 5.50
Percales	6.50/ 7.50
Light Prints	6.00/ 6.75
No. 1 Washables	3.50/ 3.75
Bleachable Khaki	8.00/ —
Unbleachable Khaki	5.00/ —
Cottonades	4.25/ 4.75
Lt. Flannelettes	8.50/ —
Men's Corduroy	3.75/ 4.25
Women's Corduroy	4.00/ 4.25
Canton Flannels, Blchd.	12.00/ —
Underwear Cutters, Blchd.	13.50/ 14.00
Underwear Cutters, Unblchd.	13.00/ 13.50

Old Domestic Cotton Rags
(Prices to Dealers, F.o.b. Ship. Pt.)
ALL PRICES NOMINAL

	Per 100 lbs.
Mixed White	$3.25/ $4.50
Cotton Pants & Overalls	3.25/ 4.00
Thirds and Blues, Repacked	3.00/ 3.25
No. 1 Roofing Rags	1.65/ 1.75
No. 2 Roofing Rags	1.45/ 1.55
No. 3 & 4 Roofing Rags	1.35/ 1.45
Roofing Bagging	1.35/ 1.45

New Foreign Cotton Cuttings
(Prices to Mills, F.o.b. Dock, N. Y.)

	Per 100 lbs.
New Dark Cuttings	$3.25/ $3.50
New Mixed Cuttings	3.50/ 3.75
Light Silesias	7.00/ 7.50
Light Flannelettes	7.00/ 7.50
New White Cuttings	nominal

New Unbleached Cuttings	nominal
Fancy Shirt Cuttings	5.50/ 6.00
Light Prints	6.00/ 6.50
Bleachable Khaki, No. 1	4.75/ 5.00
Unbl. Khaki, No. 1	4.00/ 4.25

Old Foreign Rags

(Prices to Mills, F.o.b. Dock, N. Y.)

	Per 100 lbs.
No. 1 White Cottons	$6.50/ $7.00
No. 2 White Cottons	5.50/ 6.00
No. 3 White Cottons	3.50/ 4.00
No. 4 White Cottons	3.00/ 3.50
Extra Light Prints	4.50/ 5.00
Old Light Prints	4.00/ 4.25
Med. Light Prints	2.75/ 3.00
Dutch Blue Cottons	3.25/ 3.50
Checks and Blue	2.75/ 3.00
Linsey Garments	2.10/ 2.40
Dark Cottons, European	2.00/ 2.25
Dark Cottons, Egyptian	1.85/ 1.95
Old Shopperies	1.75/ 1.85
New Shopperies	2.00/ 2.25

Bagging

(Prices to Dealers, f.o.b. N. Y.)

	Per 100 lbs.
Foreign Gunny	$5.75/ $6.00
Domestic Gunny, No. 1	5.50/ 6.00
Heavy Wool Tares	5.25/ 5.75
Foreign Manila Rope	5.25/ 5.50
Domestic Manila Rope	5.25/ 5.50
Jute Strings	5.50/ 5.75
No. 1 Sisal Strings	3.00/ 4.00
Mixed Strings	Nominal
Paper Mill Tares	3.00/ 3.50
No. 1 Scrap Burlap	
Foreign	4.00/ 4.25
Domestic	4.50/ 4.75
Austr. Wool Pouches	5.50/ 6.00
New Burlap Cuttings	5.50/ 6.00

MATERIALS

Aluminum, sulfate:		
coml. bags, wks. cwt.	1.50	
iron-free	2.75	
Alcohol, ethyl:		
tax free, dms. c.l. gal.	57	/ .85
dedl. East Miss.		
Casein, acid-prec.:		
dom. sh. pt. c.l. lb.	nominal	
imp. ex dock lb.	.34½	/ .37
Caustic soda:		
c.l. wks. solid, 76%, cwt.	3.20	
flak. & grd. 100-lb. drums	3.60	
liquid 50% tanks	2.40	
liquid 70% tanks	2.50	
China clay:		
dom. air-float, filler, c.l. wks. ton	10.00	
water-washed	11.00	
coating	16.00	/30.00
imported, ex whse. short ton	15.20	/28.35
Chlorine:		
single-unit tanks, works cwt.	2.55	
multi-unit cwt.	3.05	/ 4.25
Formaldehyde:		
USP, inh. dms. c.l. wks. lb.	.0570	
l.c.l. E. wks.	.0620	
Fuel oil:		
Bunker C, No. 6 Cal. hvy. tanks, refinery bbl.	1.25	/ 1.55
light bbl.	1.65	/ 2.10
Hydrogen peroxide:		
USP, 35% cbys. E. of Miss. lb.	.23½	
Lime:		
hydrated, bags, wks. Buffalo ton	13.50	
Rosin:		
B gum, drms, c.l. Savan. cwt.	4.10	
G, H, I, K, do. cwt.	6.29	
FF wood, do. cwt.	4.60	
Rosin size:		
70%, gum & pale grds, tank cars, south, sh. pt. cwt.	5.25	/ 5.50
Salt cake:		
dom. bulk, c.l. contract del'd ton	18.00	/20.00
wks. frt. all. ton	22.00	/ [illegible]
Soda ash:		
light, 58%, bags, wks. cwt.	1.35	
bulk cwt.	1.10	
Sodium silicate 40°:		
turbid, c.l. wks. cwt.	1.10	
l.c.l. wks.	1.30	/ 1.40
Sodium peroxide:		
dms. c.l. E. of Miss. lb.	.18	
l.c.l. do lb.	.18½	/ .19
Soybean, protein:		
chem. isol. wks. c.l. lb.	.24	/ —
Cinn. and Chic.		
Sulfuric acid:		
60° Be. cbys. c.l. cwt.	1.40	
E. wks.		
l.c.l. cwt.	1.80	/ 2.50
Sulfur:		
crude, c.l. mines, contract, long ton	18.00	
f.o.b. vessels Gulf	19.50	
Export, f.o.b. Gulf	22.00	
Sulfur dioxide:		
liquid, coml. cyl. wks. lb.	.09	
multi-unit cars lb.	.0535	
Starches:		
pearl corn, bags, c.l. Chic. cwt.	5.42	/ —
white dextrines, c.l. Chic. cwt.	6.69	/ —
potato, Idaho, c.l. wks. cwt.	5.25	/ —
potato, Maine, c.l. wks. cwt.	5.25	/ —
tapioca, conv. dextrines cwt.	6.75	/ 7.25
medium grds. Gulf and East Coast ports	5.50	/ 6.25
low, Siam, on dock N. Y.	4.75	/ 5.25
Talc:		
domestic, 50-lb. sacks, c.l. wks. ton	23.00	/28.00
Titanium dioxide:		
anastase, c.l. dedl., bags lb.	.19½	
l.c.l. dedl. lb.	.20	
rutile, c.l. dedl. lb.	.21½	
l.c.l. dedl. lb.	.22½	

N.B.: For special market conditions, see *Trends*.

IMPORTS

IMPORTS AT NEW YORK

Week Ending Aug. 26

Newsprint

Madden Reeve Angel & Co., Inc., Krageholm, Kemi, 144 rolls.
News Syndicate Co., Karen, Thorold, 2293 rolls.
R. A. Olsen, Kermic, Donnacona, 390 rolls.
News Syndicate Co., Elin Hope, Baie Comeau, 7760 rolls.
R. A. Olsen, Donpaco, Donnacona, 373 rolls.
(———), Cornerbrook, Cornerbrook, 1784 rolls.
H. C. Craig Co., A.C.D., Donnacona, 341 rolls.
R. A. Olsen, Newscarrier, Donnacona, 347 rolls.
R. A. Olsen, A.C.D., Donnacona, 359 rolls.
Finnish Paper Mills, Mormacwave, Helsingfors, 128 rolls.
Madden Reeve Angel & Co., Inc., Mormacwave, Helsingfors, 452 rolls.
Montmorency Paper Co., Sommen, Botwood, 2796 rolls, 749 rolls (siderums), 1546 rolls (Alexandria, Va.).
Madden Reeve Angel & Co., Inc., Mormacoak, Stockholm, 30 rolls.

Writing Paper

H. W. Robinson & Co., American Inventor, London, 1 cs (& envelopes).
H. W. Robinson & Co., Havmann, Hamburg, 6 cs.

Paper Towels

H. W. Robinson & Co., American Inventor, London, 1 cs.

Gummed Paper

B. F. Drakenfeld & Co., Parthia, Liverpool, 27 cs., 20 drums.

Paper Napkins

H. W. Robinson & Co., American Inventor, London, 2 cs.
H. W. Robinson & Co., American Importer, London, 4 cs.

Baryta Coated Cardboard

Lep Transport Inc., American Inventor, London, 42 rolls.

Tissue Paper

B. F. Drakenfeld & Co., Parthia, Liverpool, 40 cs. (gauze carbonizing).

Filter Paper

H. Reeve Angel & Co., Inc., American Importer, London, 30 cs.
H. Reeve Angel & Co., Inc., American Inventor, London, 17 cs.
H. Reeve Angel & Co., Inc., American Importer, London, 21 cs.

Baryta Paper

W. Reimerdes, American Inventor, Bremen, 15 cs., 3 pcls.
W. Reimerdes, American Merchant, Bremen, 32 cs.

Drawing Paper

E. de Vries, American Merchant, London, 5 cs.
Stevens Nelson Paper Corp., American Merchant, London, 2 cs.
Winsor & Newton, American Merchant, London, 2 cs.
H. Reeve Angel & Co., Inc., American Inventor, London, 1 cs.
H. Reeve Angel & Co., Inc., American Importer, London, 4 cs.

Wallboard

(———), Idefjord, Kristiansand, 43 pkgs.

Boxboard

Jay Madden Corp., Mormacwave, Helsingfors, 139 rolls.

Crepe Paper

Brondage Merchandise Corp., American Lawyer, Rotterdam, 29 cs.

Paper Caps

Ecuadorian Panama Hat Co., Saturnia, Genoa, 2 cs.

Wallpaper

Cassidy Hicks Wallpaper Co., American Importer, London, 30 ctns., 1 ble.
C. A. Haynes & Co., American Importer, London, 19 bls.
C. A. Haynes & Co., American Merchant, London, 51 bls.
W.H.S. Lloyd & Co., American Merchant, London, 5 bls.

Printing Paper

Dingelstedt & Co., American Merchant, Bremen, 11 pkgs.
Davies Turner & Co., American Manufacturer, Manchester, 1 cs.
E. de Vries, Axeldyk, Rotterdam, 2 cs.

Photo Paper

J. J. Gavin & Co., Queen Mary, Southampton, 3 cs. (unsensitized), 3 cs.

Paper Serviettes

(———), Parthia, Liverpool, 17 cs.

Air Mail Paper

B. F. Drakenfeld & Co., Parthia, Liverpool, 1 cs.

Miscellaneous Paper

Sprague Electric Co., American Inventor, London, 32 cs.
Keuffel & Esser Co., Havmann, Hamburg, 31 crates.

Rags, Baggings, etc.

Chase National Bank, American Inventor, London, 46 bls. old bagging.
A. de Vries Trading Corp., Havmann, Antwerp, 136 bls. scrap bagging.
Leumar Textile By Products, Havmann, Antwerp, 64 bls. old bagging.
E. J. Keller Co., Inc., Havmann, Antwerp, 124 bls. jute waste.
E. J. Keller Co., Inc., Havmann, Rotterdam, 167 bls. bagging.
E. J. Keller Co., Inc., Emma Bakke, Bombay, 200 bls. jute rags.
Chemical Bank Trust Co., Emma Bakke, Bombay, 54 bls. cotton rags.

Midwest Waste Materials Co., American Flyer, Bordeaux, 77 bls. old rags.
A. de Vries Trading Corp., St. Bertrand, Dunkirk, 63 bls. rags.
New England Waste Co., Kirsten, Santos, 111 bls. cotton linters.
Fibre Service, Inc., Kirsten, Buenos Aires, 255 bls. cotton linters.
Chase National Bank, American Manufacturer, Manchester, 50 bls. old bagging.
A. Siegle Corp., American Manufacturer, Manchester, 270 bls. jute waste.
A. Siegle Corp., American Manufacturer, Liverpool, 10 bls. jute waste.
E. J. Keller Co., Inc., American Manufacturer, Glasgow, 130 bls. paperstock.
E. J. Keller Co., Inc., Parthia, Liverpool, 88 bls. jute waste.
A. Siegle Corp., Parthia, Liverpool, 82 bls. jute waste.
A. de Vries Trading Corp., Havmann, Hamburg, 100 bls. scrap bagging.
F. Lissauer, Havmann, Hamburg, 178 bls. jute rags.
Whaling Products Co., Vardulia, London, 60 bls. scrap bagging.
Madden Reeve Angel & Co., Inc., Krageholm, Kemi, 68 rolls paper waste.
(———), Executor, Alexandria, 47 bls. cotton cuttings.
(———), Executor, Alexandria, 46 bls. bagging.
E. J. Lang, American Merchant, London, 66 bls. old bagging.

Old Rope

(———), Havmann, Rotterdam, 119 coils.

Casein

P. A. Dunkel, Havmann, Rotterdam, 368 bags (lactic).
Industrial Raw Materials Corp., Havmann, Rotterdam, 1220 bags.
The Borden Co. Chemical Division, Havmann, Hamburg, 1352 bags.
East Asiatic Co., Kirsten, Buenos Aires, 45 bags (lactic).

Woodpulp

Mead Sales Co., Tahsis, Port Alberini, 5384 bls. kraft pulp.

Woodpulp Boards

Jay Madden Corp., Sirius, Kotka, 327 bls. (solid white).
Jay Madden Corp., Krageholm, Kemi, 112 rolls (solid white).

IMPORTS AT NEWARK

Week Ending Aug. 26

Madden Reeve Angel Co., Inc., Krageholm, Kemi, 291 rolls newsprint.
Pulp Sales Corp., Krageholm, Kemi, 750 bls. prime unbleached sulphite pulp, 380 bls. prime bleached strong sulphite pulp, 4295 bls. prime unbleached light & strong sulphate pulp.
Bulkley Dunton & Co., Inc., Mathilda Thorden, Ornskoldsvik, 2438 bls. dry bleached sulphite pulp.
Pagel Horton & Co., Inc., Mathilda Thorden, Geffe-Karskar, 2540 bls. woodpulp.

IMPORTS AT BOSTON

Week Ending Aug. 26

(———), Algonquin Victory, Rotterdam, 41 bls. new cuttings.
(———), American Inventor, London, 2 cs. paper.
Train Smith Co., American Inventor, London, 56 bls. sisal strings, 14 bls. cotton rags.
Bulkley Dunton Pulp Co., Emma Bakke, Genoa, 126 bls. prime bleached sulphite straw pulp.
Stone & Downer Co., Parthia, Liverpool, 10 drums gummed paper.
American Express Co., Parthia, Liverpool, 8 cs. wallpaper.
Pagel Horton & Co., Inc., Mathilda Thorden, Ornskoldsvik, 2438 bls. dry bleached sulphate pulp.
Pagel Horton & Co., Inc., Mathilda Thorden, Geffe-Karskar, 422 bls. woodpulp.

IMPORTS AT PHILADELPHIA

Week Ending Aug. 26

Pulp Sales Corp., Mormacwave, Helsingfors, 779 bls. white dry mechanically ground woodpulp.
Madden Reeve Angel & Co., Inc., Mormacwave, Helsingfors, 124 rolls newsprint.
Bulkley Dunton Pulp Co., Emma Bakke, Genoa, 126 bls. prime bleached sulphite strong pulp.
(———), American Flyer, Bordeaux, 133 bls. old cotton rags.
A. L. Diament Co., St. Bertrand, Havre, 24 cs. wallpaper.
D. Benedetto, Mahronda, Port Said, 50 bls. old white bags.
(———), American Manufacturer, Manchester, 42 bls. bagging.
(———), American Manufacturer, Glasgow, 65 bls. paperstock.
Philadelphia National Bank, American Manufacturer, Glasgow, 73 bls. jute waste.
Chase National Bank, Havmann, Antwerp, 48 bls. old cotton rags, 35 bls. new light cuttings.
Castle & Overton, Inc., Havmann, Antwerp, 117 bls. dark cottons.
Pulp Sales Corp., Krageholm, Kotka, 270 bls. prime unbleached strong sulphite pulp, 520 bls. prime unbleached kraft sulphate pulp.
Pulp Sales Corp., Krageholm, Rauma, 2179 bls. white dry mechanically ground woodpulp, 715 bls. prime bleached strong sulphate pulp, 1352 bls. prime bleached strong sulphite pulp, 180 bls. prime bleached extra strong sulphite pulp.
Pulp Sales Corp., Krageholm, Kemi, 650 bls. prime unbleached kraft sulphate pulp, 2005 bls. prime unbleached strong sulphite pulp, 630 bls. prime unbleached extra strong sulphite pulp, 135 bls. 3rd quality unbleached sulphite pulp.
Pagel Horton & Co., Inc., Mathilda Thorden, Ornskoldsvik, 4268 bls. dry bleached sulphate pulp.
Pagel Horton & Co., Inc., Mathilda Thorden, Geffe-Karskar, 508 bls. woodpulp.
Tradesmans National Bank Trust Co., Executor, Alexandria, 50 bls. cotton rags.

IMPORTS AT BALTIMORE

Week Ending Aug. 26

Jay Madden Corp., Mormacwave, Helsingfors, 85 rolls folding boxboard.
American Cyanamid Co., Havmann, Rotterdam, 368 bags lactic casein.
S. George Co., Havmann, Rotterdam, 100 coils old rope.
J. S. Connor, Mathilda, Gothenburg, 39 coils old rope.
Pagel Horton & Co., Inc., Mathilda Thorden, Karskar, 762 bls. woodpulp.

IMPORTS AT NORFOLK

Week Ending Aug. 26

Madden Reeve Angel & Co., Inc., Mormacwave, Helsingfors, 594 rolls newsprint.
D. Benedetto, Emma Bakke, Genoa, 81 bls. old bagging.
Loumar Textile By Products, American Harvester, Hamburg, 172 bls. jute waste.
(———), American Manufacturer, Manchester, 32 bls. bagging.
E. J. Keller Co., Inc., American Manufacturer, Glasgow, 40 bls. paperstock.
National City Bank, Havmann, Hamburg, 95 bls. scrap bagging.
W. J. Green, Havmann, Antwerp, 30 bls. jute waste.
E. J. Keller Co., Inc., Havmann, Rotterdam, 96 bls. bagging.
D. Benedetto, Havmann, Rotterdam, 127 bls. rags.
A. de Vries Trading Corp., Havmann, Rotterdam, 61 bls. bagging.

IMPORTS AT SAN FRANCISCO

Week Ending Aug. 26

Tribune Publishing Co., Peter Maersk, Montreal, 195 rolls newsprint.

NEW LITERATURE

Armstrong Machine Works. Bulletin No. 206, "Air Relief Traps." Describes ball-float traps for venting air from any liquid under pressure.

Ampco Metal, Inc. Bulletin 66a. Covers recommended practices for the machining of Ampco metal.

American Standards Assn. American Standard B56.1–1950, 32 p., price 85c. Devoted to industrial truck safety standards.

American Lumber & Treating Co. Technical Dept. Illustrated Booklet, 44 pp., "Service Records for 'Wolmanized' Pressure-Treated Lumber."

The Borden Co., Chemical Div. Folder, "Cascophen, A Liquid Resorcinal Resin." Contains household and production gluing instructions.

The Bristol Co. Bulletin G621. Provides information on "Series 500" recording gauges.

Wm. L. Barrell Co. "Barrell's Paper Annual, Vol. IX." An indispensable reference book to those interested in association work; a "Directory of Officials of Paper Industry Associations." Distributed free of charge.

The Bin-Dicator Co. Bulletin, "Bin-Dicator, Bin Level Indicator For All Bulk Materials." Technical copy and specifications.

Conoflow Corp. Bulletin FH-15-3, "Cono Airpak." Technical copy on Model FH-15. Packaged Regulator-Filter and Dripwell.

Central States Forest Experiment Station. Report, "Forest Statistics of Central Kentucky." The first intensive study on this area, and part of a nation-wide survey on the U. S. timber situation.

Calumet & Hecla Consolidated Copper Co., Wolverine Tube Div. Booklet, "Spun End Tube." Technical copy on spun end process. Illustrated.

The Cooper Alloy Foundry Co. Catalog No. 52, "Stainless Steel Valves, Fittings, Accessories." Includes engineering drawings, corrosion data, etc.

Eastman Kodak Co. "Photographic Science and Technique." Technical supplement to the PSA Journal. Describes preparation of electron micrographs of cellulose acetate fiber surfaces.

U. S. Pulp Producers Assn, Inc. Book, "Wood Pulp Statistics, 1950 Edition." A statistical record of basic trends of supply, demand and trade in important pulp producing and consuming countries of the world. Price $5 plus postage.

SHOP HINTS

"Dag" Colloidal Graphite

Where sodium silicate adhesives are used in the manufacture of corrugated fiberboard, it has been found desirable to have the heating platens treated in such a way that the dry silicate film may be readily removed. This is achieved by coating the heating platen with colloidal graphite. A dilute aqueous dispersion of the colloidal graphite is sprayed onto the hot platens at frequent intervals until a satisfactory coating is built up and after that applied only sufficiently often to maintain the coating. The graphite film is extremely adherent and does not discolor the bottom liner except for a few feet immediately after application. Dehydrated silicate does not adhere to the graphite and may be readily removed. By maintaining a satisfactory graphite film on the platens they can be made practically self-cleaning.

In addition to preventing adhesion of the silicate, the graphite serves as a lubricating agent for the paper board, reducing the tension necessary to pull the board over the heating platens and reducing scuffing and peeling of certain types of linerboard. Where starch is used as an adhesive in this same field, colloidal graphite is being used very successfully in preventing the adhesion of starch to corrugating machine belts.

The graphite film formed on the belts overcomes the extreme difficulty in removing the starch and at the same time prevents the edges of the belts from fraying badly, which usually results from the cleaning process when no colloidal graphite film is present.

Small Plant Bleaching

The new Cold Steep Bleaching Process (U. S. Patent 2514503; Canadian Patent 461,240) offers the small operator the efficiency of high densities without post-neutralization or the use of pulp mixing, retention or reduction equipment. Investment in equipment is thus minimized.

The process has extensive adaptability to many variations of product, equipment, and local conditions. In the new process a pulp sheet is impregnated with a hydrogen peroxide solution of controlled alkalinity. The impregnated pulp in rolls or sheets stands at room temperature for several days and then is added directly to the paper furnishing equipment. Room temperatures are used and storage time is flexible within the operating densities of 25 percent to 50 percent.

Hydrogen peroxide is the active bleaching agent. For bleaching groundwood pulp it is used with sodium silicate. Other alkalies such as trisodium phosphate, pyrophosphates or caustic soda are used on semi-chemical or chemical pulps.

The pulp sheet is formed either on a Kamyr or Rogers or other feltless wet machine, or on a vacuum drum thickener equipped with press rolls so that the sheet is self-supporting and of a density preferably between 35 percent and 50 percent.

Bleach liquor — about 0.35 gallons per face foot — passes through distributor pipes and to applicator rolls on which brushes assist in spreading it evenly over one or both faces of the pulp sheet. The continuous impregnated web is wound into rolls, or slit and cut in sheets. The pulp is then stored for 1 to 7 days at the mill or in transit. After storage, the sheets or rolls are added to the furnish hydrapulper or beater where only slight final furnish pH adjustment is required.

Minor changes in bleach liquor formulæ adapt the process for bleaching sulfite and semi-chemical pulps or for the super-bleaching of bleached sulfites and krafts.

Adaption of the Cold Steep Bleaching process to other types of high density equipment is in the active mill development stage.

The following tabulation shows some typical results from the new Cold Steep Bleach process.

Pulp Type	*Wood*	*BRIGHTNESS* *Starting*	*Bleached*	*dB*
Groundwood	Spruce-Balsam	59	72	13
Groundwood	Cottonwood	57	71	14
Sulfite	Western Hemlock	49	73	24
Sulfite	Spruce-Balsam	72	89	17
Kraft	Southern Pine	70	85	15
Semi-Chemical	Neutral Sulfite Poplar	53	64	11

NEW PAPER USES

Paper Boat

According to the *Forestry Digest*, a new method of making a paper boat has been developed. This boat uses kraft paper and cardboard bonded with Cascophen, a waterproof and heatproof resorcin resin glue. The mold over which the paper sheets are laid may be of wood, plaster, or the hull of a boat previously built. This frame is covered with newsboard, over which two layers of kraft wrapping paper are glued with Cascophen. A layer of unbleached muslin and two more layers of kraft paper are applied, using the glue, and the boat is then ready for a coat of paint or varnish. The model boat built was 14 feet long, 26 inches wide, 9 inches deep, and weighs just under 50 pounds. After a full season of use it was in excellent condition. When kept in the water for eight hours it did not increase in weight to any noticeable degree.

NEW PRODUCTS

Instant-Sealing Envelope Bond

Announcement of a new 100 percent new-cotton-fibre envelope bond paper, with exceptionally fast and permanent sealing advantages, is made by the Gilbert Paper Co., Menasha, Wis.

To be known as Lancaster Envelope Bond, this instant-sealing sheet at last overcomes the difficulty of securing a quick, safe seal with envelopes in the 100 percent new-cotton-fibre (or rag) class. Special formulation of the Lancaster Envelope paper prevents the envelope and flap from warping and curling. The envelopes stack and feed absolutely flat.

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ASSOCIATIONS

Annual Symposium on Instrumentation

The Agricultural and Mechanical College of Texas, at College Station, Texas, will offer their fifth symposium on Instrumentation for the Process Industries, on October 11-13, 1950. The course will be conducted as a seminar with lectures and discussions on the subject of automatic control. Cooperating with Texas A & M in the presentation of this course will be many industrial concerns manufacturing oil, gas, and chemical products. Manufacturers of instruments and automatic controls, likewise, are taking part by arranging to show educational exhibits, and provide capable lecturers for many of the sessions.

The program will cover a wide variety of subjects making it of value to anyone who uses such instruments, especially to instrument, process design and operating engineers. Problems of instrument maintenance will not be covered specifically in the lectures, but ample opportunity for the consideration of such problems will be provided in the discussion periods. The lectures will cover the subjects of measurement and control of temperature, pressure and liquid level, time control, and other allied subjects. The relationship between practice and basic control theory will be stressed.

Anyone living either in or outside Texas is eligible to take this course on payment of the $5.00 registration fee; pre-registration by mail is encouraged.

Further information may be obtained by writing Professor P. G. Murdock, Chemical Engineering Department, Texas A & M College, College Station, Texas.

We'll Meet You In Milwaukee

"We'll Meet You In Milwaukee" is the friendly way that L. S. Sabatke, Marathon Corp., Rothschild, Wis., chairman of the Northwestern Division of The American Pulp and Paper Mill Superintendents Assn., Inc., invites members of his Division and their wives, as well as all members of the national association, all affiliates, and friends of the industry to the 1950 fall meeting of the Division.

Scheduled for September 15-16, 1950, at Hotel Schroeder, Milwaukee, Wis., the meeting promises to be outstanding. There will be technical papers, mill visits, an address by one of the industry's leading executives, and a marker dedication of the site of the first paper mill in Wisconsin.

Details of the program follow:

FRIDAY, SEPTEMBER 15, 1950

Registration and Plant Visits
A. O. Smith Corp.; Allis-Chalmers Corp.; Hummel-Downing Co.; Falk Corp.; Hercules Powder Co.
Luncheon (North Hills Country Club —North on Highway 41)
Golf, Skeet, Trap Shooting

SATURDAY, SEPTEMBER 16, 1950

Technical Papers
Bleaching Kraft with Chlorine Dioxide
The Curlator
Mill Safety
Use of Sulphite Waste Liquor as Road Binder
Measurements in Pulp and Paper Mills
Joint Luncheon
Speaker, D. C. Everest, Marathon Corp., Rothschild, Wis.
Business Meeting (Election of officers, etc.)
Dedication of the site of the first paper mill in Wisconsin (located in downtown Milwaukee)
Affiliates cocktail party, Hotel Schroeder
Dinner-Dance

LADIES PROGRAM

FRIDAY, SEPTEMBER 15, 1950

Registration
Visit to Johnston Cookie Co.
Luncheon (Crystal Room, Hotel Schroeder)
Style Show, courtesy of Hixon's
Visit to Phoenix Hosiery Mills and Rhea Dress Manufacturing Co.

SATURDAY, SEPTEMBER 16, 1950

Shopping, or as you will
Joint Luncheon, Speaker D. C. Everest
Dedication of site of first paper mill in Wisconsin
Affiliates cocktail party
Dinner-Dance

Unless otherwise indicated, all functions will be held at Hotel Schroeder. Mr. Sabatke suggests that all persons planning to attend the meeting make their room reservations immediately and directly with Hotel Schroeder.

Controllers Institute Program

NEW YORK — Government controls over business, national defense, the changing status of world trade and the national economy, and other timely topics will be discussed at the 19th annual meeting of the Controllers Institute of America, September 17-20, Edgewater Beach Hotel, Chicago.

Form Weatherproof Fibre Box Group

At a meeting held at the Blackstone hotel, Chicago, by producers of corrugated and solid fiber containers, an organization was formed which will be known as Weatherproof Fibre Box Group, a voluntary, unincorporated association not for profit. Membership is open to all producers of corrugated and solid fiber containers.

The industry decided that it was desirable and necessary to organize such a group in order to expedite the production and delivery of fiber boxes in the quantities needed by the military and other departments of the government, as well as their contractors, during the present emergency, and to assure that such boxes meet specification requirements.

General Everett Busch, Commanding General of the Chicago Quartermaster Depot, attended the organization meeting and addressed those present. Colonel H. A. Johnson and Messrs. L. E. Clayton and Henry Brinker of the Depot were present also, and they informed the Group regarding immediate government needs and estimated demands for the next six months.

John V. Spachner, executive vice-president of Container Corp. of America, Chicago, was elected chairman of the Group. Two vice-chairmen will be elected and operating committees appointed at the next meeting scheduled for September 19. Albert W. Luhrs of Washington was chosen as consultant to the Group.

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AMERICAN PAPER AND PULP ASSOCIATION'S PAPER AND PRODUCTION RATIO REPORT

(Production as percent of six-day capacity)

COMPARATIVE WEEKLY SUMMARIES

	July 22	July 29	Aug. 5	Aug. 12	Aug. 19
1950	102.5	106.1	106.5	103.9r	105.7
	July 23	July 30	Aug. 6	Aug. 13	Aug. 20
1949	*82.7*	*84.0*	*83.5*	*85.9*	*89.3*

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1949	*94.6*	*92.8*	*89.1*	*85.1*	*82.7*	*78.6*	*72.8*	*87.6*	*89.7*	*96.0*	*98.2*	*89.8*	*88.0*
1950	97.6	101.1‡	102.6‡	100.9‡	101.8‡	103.2‡	90.8‡						

r Revised.
‡ Preliminary.

COMPARATIVE YEARLY SUMMARIES

	1943	1944	1945	1946	1947	1948	1949	1950
Year to Date	88.2	87.9	87.8	99.9	103.7	97.5	85.5	100.5
Year Average	87.8	88.1	89.4	100.1	104.3	96.2	88.0	

PAPERBOARD OPERATING RATIOS†

	July 22	July 29	Aug. 5	Aug. 12	Aug. 19
1950	95	96	98	99	100
	July 23	July 30	Aug. 6	Aug. 13	Aug. 20
1949	*76*	*80*	*82*	*84*	*87*

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1949	*88*	*85*	*79*	*79*	*78*	*75*	*64*	*86*	*87*	*94*	*93*	*83*	*83*
1950	88	92	91	92	91	94	82						

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "Inch-Hours" reported to the National Paperboard Association.

Baker Heads U.S.C. of C. Committee

WASHINGTON, D. C. — James W. Baker, president and general manager, Baker-Lawhon and Ford, Inc., Shreveport, La., has been re-elected for a third term as chairman of the Domestic Distribution Department Committee of the Chamber of Commence of the United States. Mr. Baker, a director of the National Chamber, has been a member of the committee since 1946.

The committee announced plans for four Marketing Conferences. The Seventh National Marketing Conference will be held in San Franchisco, March 6 and 7, 1951.

Sponsored by the National Chamber's Domestic Distribution Department it will receive the collaboration of the San Francisco and Oakland Chambers, the California State Chamber and the San Francisco and Oakland Retail Merchants Assn.

A regional Marketing Conference for the Southeastern Division will be held at Knoxville on October 13, 1950. Collaborating will be the Knoxville Chamber of Commerce, University of Tennessee and numerous local organizations.

Another regional Marketing Conference is slated for the Southwestern Division on November 9, 1950. Collaborating will be the Houston Chamber of Commerce, Retail Merchants Assn. of Houston and local universities.

Another regional Marketing Conference will be held at Pittsburgh, Pa., in February, 1951. Collaborating will be the Retail Council of the Chamber of Commerce of Pittsburgh, Retail Merchants Assn. of Pittsburgh, local universities and local organizations.

The committee announced three major studies during the course of the year. These will cover "Costs of Distribution Services," "Sales Compensation Methods in Distribution," and "Managerial Control Methods in Distribution." Reports will be published on these subjects.

Heads P.P.A. Market Research

NEW YORK—Ben Vail has been retained to direct the recently established Market Research Division of the Paper Plate Assn., Inc., according to E. A. Phillips, chairman.

Mr. Vail, who recently resigned as editor of *Food Topics*, was formerly on the headquarters staff of the National Assn. of Retail Grocers and is now handling special merchandising assignments.

National Safety Congress

CHICAGO—The 1950 National Safety Congress will be held in Chicago, October 16-20. The pulp and paper program reportedly will be the biggest and best ever held. There are more sessions scheduled this year than ever before, and they will bring up-to-the-minute details on the latest in pulp and paper safety.

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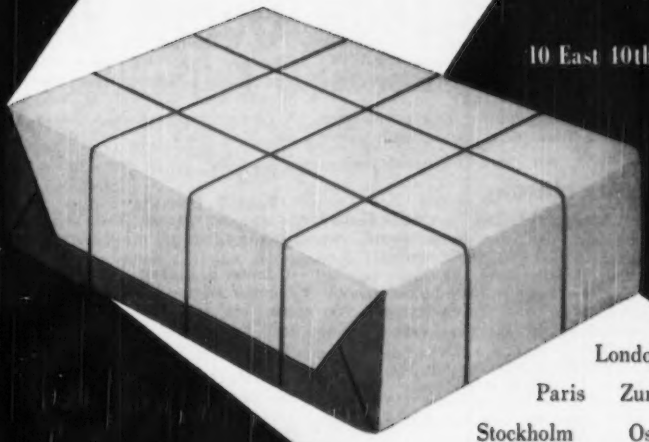

London
Paris Zurich
Stockholm Oslo
Sousse Montreal
Buenos Aires
Sao Paulo

ASME Invites F.P.R.S. To Fall Meeting

Fred Wangaard, secretary of the Wood Industries Division, American Society of Mechanical Engineers, and member of the Abstracting Committee of the Forest Products Research Society, has extended to all Forest Products Research Society members an invitation to attend the September 21 Wood Industries Division meeting to be held in connection with the ASME fall meeting at the Hotel Sheraton, Worcester, Mass.

The technical session will contain the following papers: "Furniture Design from the Standpoint of Lumber Utilization," by Frank T. Parrish, Heywood-Wakefield Co., Gardner, Mass.; "Developments in Wallboard Construction from Wood Waste," by Robert Caughey, Souhegan Mills, Wilton, N. H.; "Steels Used in the Cutting of Wood," by Harry Pavitt, Simmonds Saw and Steel Co., Fitchburg, Mass.

Principal speaker at the luncheon will be Nathan Tufts, president of the New England Box Co., Greenfield, Mass. He will talk on "New England Wood Waste Problems and Utilization." Also scheduled is a tour of inspection of the Heywood-Wakefield Co. furniture plant operations at Gardner, Mass.

P. S. P. M. W. Annual Meeting

PORTLAND, Ore. — The International Brotherhood of Pulp, Sulphite and Paper Mill Workers concluded its 22nd annual meeting at Portland.

The business transacted was a raise for the president from $125 to $150 per week, an increase in dues from 75 cents to 90 cents per month, increased funds to the research and education department and the granting of "powers of discussion" to the executive board in the handling of funds.

A merger between the Papermakers Union was turned down for need of further study.

Annual A. I. Ch. E. Meeting

COLUMBUS, Ohio—The Central Ohio Section of the American Institute of Chemical Engineers will be host to some fifteen hundred engineers and executives of the chemical and allied industries who will assemble in Columbus, from December 3 to 6, 1950. The occasion will be the forty-third annual meeting of the A.I.Ch.E.

Cochairmen for this year's convention are Joseph H. Koffolt, chairman, Department of Chemical Engineering, Ohio State University, and Frank C. Croxton, assistant director, Battelle Memorial Institute.

The technical program will include timely symposia on air pollution, glass manufacture, ultrasonics, the processing of viscous materials, and phase equilibria. Another feature will be the annual Institute lecture by an outstanding member of the profession.

The meeting will be held at the Neil House and the Deshler Wallick hotel in downtown Columbus. Numerous inspection trips to Central Ohio plants and technical and educational facilities are being planned.

For details concerning reservations and registration, address S. L. Tyler, Executive Secretary, American Institute of Chemical Engineers, 120 East 41st street, New York 17, New York.

Navigators Meet Sept. 8

NEW YORK—The timely topic, Paper at Work, together with a discussion of current conditions in the paper market, feature the first fall session of The Navigators, Charles V. Morris, president, announced. He indicated that a prominent paper technician would speak when the club meets at Schrafft's Restaurant, 58 West 23rd street, New York, Friday evening, September 8 at 6:30 p.m.

Philip Evanoff, a member of the sales service department of The Mead Corp., is guest of the evening. Long recognized as an authority in the field, Mr. Evanoff is eminently qualified to tell the semi-technical kind of paper story The Navigators enjoy hearing. The program will take the form of visual presentations. Mr. Evanoff illustrates his papermaking techniques with new paper products and new uses for old products.

The "last-minute" round-up of conditions in the paper market marks the beginning of a new monthly department of The Navigators' activities. While the present emergency persists, members and guests of The Navigators will learn, first hand, about the mutual problems of graphic arts suppliers and producers.

During the meeting new committees will be announced and chairmen appointed.

Dupont Exhibition

WILMINGTON, Del. — A new display showing how paper is made and how the E. I. du Pont de Nemours & Co. products enter into the paper-making hibition Center in the DuPont Buildprocess in its various stages has opened in the DuPont Company Exing here.

The display points up the importance of paper in everyday life. It shows a big scale holding 333 pounds of paper, the amount the average American uses in a year—in the form of newspapers, magazines, cartons, boxes, wrapping paper, and even in the money spent to buy them.

A number of displays in the exhibit show the DuPont products that are used in the various steps of papermaking. These include bleaching chemicals used in the manufacture of pulp, pigments, dyes, and a variety of other chemical compounds that have important applications in what is called the "paper formation" stage.

There is also a scale model of the basic machine that takes woodpulp and, by a series of complicated operations, converts it into finished paper.

Among other displays is one showing operations of the Curtis Paper Co., Newark, Del., General Eisenhower's "Crusade in Europe" and many other famous books are printed on paper made at this Delaware mill.

Safety Contest Kit

CHICAGO—A packaged plan showing how to promote interest in safety through contests, with cash prizes paid by the National Safety Council, is offered in the Council's 1951 calendar contest kit.

The kit contains a complete instruction booklet, showing how to conduct safety contests in plants, monthly contest posters, streamers and contest bulletins for bulletin boards, reproduction proofs and mats of limerick contest cartoons, sample entry blank forms for contests, "spot" announcements for public address systems or house organs, and copy for letters and announcements.

Kimberly To End Stock Conversion

Kimberly-Clark Corp. has advised the Stock Exchange that the privilege of converting its 4 percent convertible second preferred stock into common stock will terminate at the close of business on September 29, 1950. The company's preferred stock has been called for redemption as of October 2, 1950.

OBITUARIES

Roy E. Davison, 78, president of the Standard Paper Co., died August 18 in a Tacoma hospital. He is survived by two sons, Kenneth D. and Edwin N.; two daughters, Mrs. Larry Doyle and Mrs. Margaret Mathews; a sister, Mrs. Maude Hargrave; and three grandchildren.

Robt. B. Donnelly, former president of Central Waxed Paper Co., died at Monrovia, Calif., August 19.

James B. Lackey, 76, brother of the founder of the Cohoes Envelope Co., Inc., and nationally prominent industrial figure, died recently at his home in Loudonville, N. Y.

Robt. D. McCoy, 66, president of the Midwest Wall Paper Mills, Inc., Joliet, Ill., died August 11. He established the firm in 1922. His widow and daughter survive.

Jacob J. Neidorf, 79, founder and principal owner of the Saratoga Wall Paper Manufacturing Co., died on August 15 at his home in Saratoga Springs, N. Y. He founded the concern in 1912 and maintained an active interest until recently. The business is now carried on by his son, S. Lester Neidorf. The principal survivors are his widow, a daughter and a son.

J. Reginald Stebbins died at his home in Watertown, N. Y., on August 22. He was for many years president of W. C. Stebbins Co. and a director of Bagley & Sewall Co.

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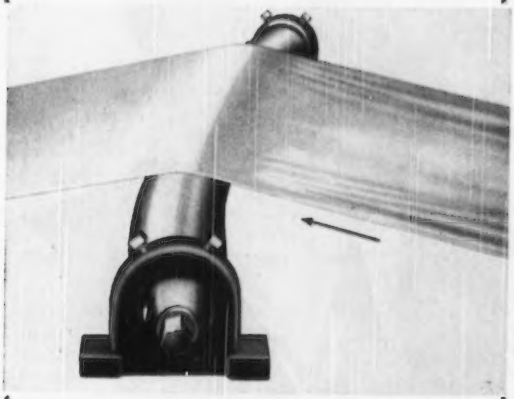
WRINKLES and CREASES



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MANY COMPANIES report, "We avoid costly shutdowns due to wrinkles and creases by using Mount Hope Expanders before our paper enters the converting machines."

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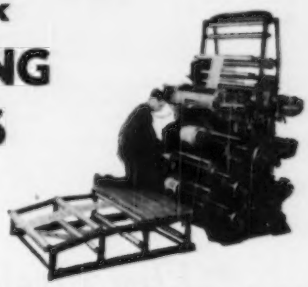

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Motor driven Falk Drives with 50 KW Generator, convertor set and panel control.

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One Ferguson Packomatic Case Sealing Machine complete with all operating equipment. Adjustable for case sizes.

Noble & Wood Mill complete with 600 HP Induction Motor, Magnetic Controller and Extra Equipment.

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100" Horne single knife Sheeter with back-stand.
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Paper Machines, Paper Mill Machinery and Converting Equipment.

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87 feet 8" 13 ply Goodyear Rubber Belting.
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46 Chilled Iron Rolls—Assorted sizes.

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1—112" face 7 roll.

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1—134" face x 36" diameter, with stainless steel shafts.
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1—96" All bronze—adjustable.

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PULLEYS
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1—42" Dillon with 8 roll backstand.
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SHREDDERS
1—American 37" Hamermill, anti-friction bearings.
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1—66" Perkins 7 roll—with all electric equipment.
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1—88" Thickener—new wood vat.
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1—62" Oswego.

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2—Dual Flow Stainless Steel vats for cylinders 48" diameter x 153" face—with stands for couches.

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1—84" Wet machine—new vat.

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1—84" Type 10—Model 14. Late Type.

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1—62" Type 6.

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1—65" Kidder Late Type Super Speed Junior Model Shear Cut Slitter & Rewinder.

1—62" Waldron Shear Cut Slitter & Rewinder.

1—42" Johnstone Twelve Slitter & Rewinder.

1—30" Fales Standard Model B Slitter & Rewinder.

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6—Seybold. 1—40" 10Z, 1—44" Precision Type, 1—54" Holyoke, 1—54" 20th Century. 1—60" 20th Century, 1—72" 20th Century, 3—Oswego, 44", 50" and 57", 2 Sheridan, 1—50", 1—65"; 2—Acme, 32 and 42"; 1—S&W Undercut, 63".

1—Hudson-Sharp 3 deck 10 x 10 Napkin Folding Machine. ¼, ⅛ & ⅛ Fold.

1—McCade Mfg. Co.'s facial tissue paper folding machine with AC motor. Production 40 to 50 gross in 8 hours. 400 count. 8" x 10".

1—Paper Converting Machine Co.'s single width towel folder, late model.

2—81" Dietz Toilet Paper Perforators. Sheets 4½ x 4½ and 4½ x 5 and paper towels perforated 7½ and 13½".

1—81" Hudson Sharp Toilet Perforator.

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1—Pickett Garment Bag Machine, making bags 36" and 54".

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A-31

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FOR FURNISHING

PAPER FOR THE U. S. GOVERNMENT PRINTING OFFICE

SEALED PROPOSALS will be received until 10 a.m., September 11, 1950, in the room of the Joint Committee on Printing, in the Capitol, Washington, D. C., for furnishing the paper for the public printing and binding, and blank paper for the use of the Government departments and establishments in the District of Columbia, for the term of three months, beginning October 1, 1950; deliveries to be f. o. b. Government Printing Office Warehouse, or warehouse sidings, Washington, D. C. The proposals will be opened in the presence of and the award of contracts made by the Joint Committee on Printing to the lowest and best bidders are in conformity with the requirements of the proposal. The Committee reserves the right to reject any or all bids, or to accept any bid or any part and reject the other part, if, in its opinion, such action would be in the interest of the Government.

Blank proposals containing the instructions, schedules, and specifications may be obtained by addressing John J. Deviny, Public Printer, Washington 25, D. C.

Contracts will be entered into for supplying the quantities required, whether more or less than the estimates, as provided in paragraph 15 of the instructions.

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In cases where more than 1,000 reams are called for, proposals will be received for 1,000 reams or more.

By direction of the Joint Committee on Printing.

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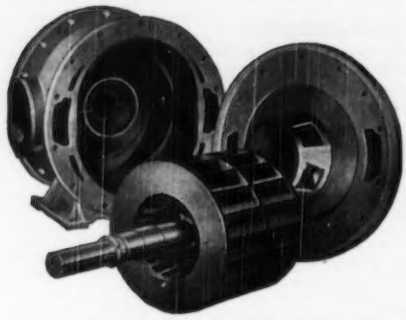

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FLOORING, GRATING AND TREADS
The Goodyear Tire & Rubber Company
Norton Co.

FLOW BOXES, STAINLESS-CLAD
Lukens Steel Co.
The Sandy Hill Iron & Brass Works

FORK LIFT TRUCKS
Towmotor Corp.

FORMATION
Thwing-Albert Instrument Co.

FORMING MACHINES
Black Clawson Company
Downingtown Mfg. Co.
The Moore & White Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

FREENESS TESTERS
Testing Machines, Inc.

GASKETS
The Goodyear Tire & Rubber Company

GEARS
Black Clawson Company
De Laval Steam Turbine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
E. D. Jones & Sons Co.
Link Belt Company
Moore & White Co.
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

GRINDERS
Bridgeport Safety Emery Wheel Company
Carthage Machine Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell Co.
Norton Company
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Works

GRINDING WHEELS
Norton Company

GUIDES, WEB
The Moore & White Co.
Mount Hope Machinery Co.
Bound Brook Engrg. Co.
John Waldron Corp.

GUMMING MACHINES
Dilts Machine Works
The Sandy Hill Iron & Brass Works

GUMS
National Starch Products, Inc.
Stein-Hall Co., Inc.

HEADS
Babcock & Wilcox Co.
Lukens Steel Company

HEAT EXCHANGERS AND RECOVERY SYSTEMS
Davis Engrg. Corp.
Stickle Steam Specialties Co.
Westinghouse Electric Corp.

HEATING, VENTILATING & AIR CONDITIONING
The Appleton Machine Co.
Davis Engrg. Corp.
E. D. Jones & Sons Co.
General Electric Co.
Leeds & Northrup
D. J. Murray Mfg. Co.
Red-Ray Mfg. Co., Inc.
Ross Engineering Corp., J. O.
Stickle Steam Specialties Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

HOSE (Air, Water, Suction, etc.)
The Goodyear Tire & Rubber Company

HUMECTANTS
Aktivin Division, Heyden Chemical Corp.
Nopco Chemical Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

IMPREGNANTS
American Cyanamid Company Industrial Chemicals Division

INDENTING MACHINES
Dilts Machine Works

INDUSTRIAL TRACTORS
Towmotor Corp.

INKOMETER
Thwing-Albert Instrument Co.

INSTRUMENTS, TESTING AND MEASURING
Bauer Brothers Co.
Beckman Instruments, Inc.
Bunge Pulp & Paper Co.
N. P. Bowsher
General Electric Company
W. & L. E. Gurley
National Technical Laboratories
B. F. Perkins & Son
Photovolt Corp.
Taylor Instrument Cos.
Testing Machines, Inc.
Thwing-Albert Instrument Co.

JOINTS
Johnson Corp.
Shartle Bros. Mch. Co.

JORDAN FILLINGS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
E. D. Jones & Sons Co.
Shartle Bros. Mch. Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

KNIVES
Black Clawson Company
Dilts Machine Works, Inc.
Hamblet Machine Co.
Heppenstall Company
E. D. Jones & Sons Co.
The Moore & White Co.
Taylor Stiles & Co.
Valley Iron Works Co.

KNOT BORING MACHINES
DeZurik Shower Company

KRAFT WRAPPING PAPERS
Canadian Newsprint Supply Co.

LABORATORY CORRUGATOR
Thwing-Albert Instrument Co.

LABORATORY EQUIPMENT
Appleton Machine Co.
Bauer Brothers Co.
Beckman Instruments, Inc.
Bird Machine Company
Dilts Machine Works
W. & L. E. Gurley
E. D. Jones & Sons Co.
Leeds & Northrup Company
National Technical Laboratories

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COVER
CUP AND CONTAINER
FILE FOLDER
TAG
COATED
MACHINE COATED

KRAFT CONVERTING AND KRAFT ENVELOPE
KRAFT LINER BOARD

MILLS

Mechanicville, New York
Luke, Maryland
Covington, Virginia
Tyrone, Pennsylvania
Williamsburg, Pennsylvania
Charleston, South Carolina

WHERE TO BUY

Taylor Instrument Companies
Testing Machines, Inc.
Valley Iron Works Co.
John Waldron Corp.

LAMINATING COMPOUND
National Wax Company

LAMINATING MACHINES
Dilts Machine Works
John Waldron Corp.

LAY BOYS
Dilts Machine Works
Gibbs-Brower Company, Inc.
Hamblet Machine Co.
Moore & White Co.

LINTER COTTON
Railway Supply & Mfg. Co.

LUBRICANTS
Sinclair Refining Co.
Socony-Vacuum Oil Co.
Sun Oil Company
The Texas Company
Tide Water Associated Oil Co.

MAGAZINE REELS
Dilts Machine Works (Kohler Systems)

MATERIALS HANDLING
Cleveland Crane & Engrg. Co.
Dilts Machine Works
Industrial Brownhoist
Shartle Bros. Mch. Co.
The Wellman Engrg. Co.

MICROMETERS & CALIPERS
Farrel-Birmingham Co.
Lobdell Co.
Testing Machines, Inc.

MICRO-CRYSTALLINE WAXES
Bunge Pulp & Paper Co.
Moore & Munger
National Wax Company

MOISTURE CONTENT CONTROL
Stickle Steam Specialties Co.

MOTORS AND GENERATORS
Allis-Chalmers Mfg. Co.
Fairbanks, Morse & Co.
General Electric Company
Reliance Electric & Engrg. Co.

NEWSPRINT
Bunge Pulp & Paper Co.
Canadian Newsprint Supply Co.

NICKEL AND NICKEL ALLOYS
The International Nickel Co.

NOZZLES
Link Belt Company

PACKING BOXES
Johnson Corporation
The Moore & White Co.
Shartle Brothers Machine Co.

PAPER CONDITIONING
Vapo Systems Co.

PAPER MACHINE DRIVES
Manchester Machine Co.

PAPER MACHINES
Bagley & Sewall Co.
Black Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Lukenweld
Moore & White Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

PAPER MACHINE SLICES
Black Clawson Company
E. D. Jones & Sons Co.
The Moore & White Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

PAPER TUBE MACHINERY
Dietz Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.

PARAFFINE WAXES
Moore & Munger
National Wax Company

PARAFFIN WAX EMULSIONS
Nopco Chemical Co.

PASTING MACHINES
Black Clawson Company
Dilts Machine Wks.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

PEBBLE MILLS
F. L. Smidth & Co.

PERFORATED METAL
Allis-Chalmers Mfg. Co.

PETROLATUMS
National Wax Company

pH METERS
Thwing-Albert Instrument Co.

PIPE
Armco Drainage & Metal Products, Inc.
Babcock & Wilcox Co.
Crane Company
Michigan Steel Casting Co.
National Tube Co.
Walworth Company

PIPE FITTINGS
Armco Drainage & Metal Products, Inc.
Crane Company
Michigan Steel Casting Co.
Walworth Co.

PIPE MARKERS
W. H. Brady Co.

PITCH CONTROL
American Cyanamid Company Industrial Chemicals Division
General Dyestuff Corp.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Rohm & Haas Co.

PLASTICIZERS
American Cyanamid Company Industrial Chemicals Division
Aktivin Division, Heyden Chemical Corp.
Nopco Chemical Co.

PLATERS
Gibbs-Brower Company, Inc.
Perkins & Son, Inc., B. F.

PLATES
Armco Steel Corp.
Babcock & Wilcox Co.
J. O. Ross Engrg. Corp.
Lukenweld Division
Lukens Steel Company
Timken Roller Bearing Co.

PLUGS
The Appleton Machine Co.
Black Clawson Company
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.

POPE TYPE REELS
Manchester Machine Co.

PRECISION SAMPLE CUTTER
Testing Machines, Inc.
Thwing-Albert Instrument Co.

PRESERVATIVES
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.

PRESSURE VESSELS STEEL AND ALLOY
Babcock & Wilcox Co.

PRESSURE VESSELS
Chicago Bridge & Iron Co.

PRESSES
Black Clawson Company
Dietz Machine Works
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Machine Co.
The Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.
Waldron Corp., John
H. G. Weber & Co., Inc.
Williams Apparatus Co.

PULP CLASSIFIER
The Bauer Bros. Co.
Thwing-Albert Instrument Co.

PULP CLEANERS
Corp.
Nichols Engrg. & Research

PULP STOCK VALVES
Crane Company
Record Fdy. & Mach. Co.
Shartle Brothers Machine Co.

PULPERS
American Paper Machy. & Engrg Works, Inc.
Bauer Brothers Co.
Dilts Machine Works
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.

PULPS
Brown Company
Bunge Pulp & Paper Co.
Gottesman & Co., Inc.
Lyddon & Co. (America), Inc.
Parsons & Whittemore, Inc.
Perkins-Goodwin Co.
Price & Pierce, Ltd.
Pulp and Paper Trading Co.
Restigouche Co., Ltd.

PULPSTONES
Norton Company

PULP TESTERS
Paper and Pulp Testing Laboratories

PULVERIZING MILLS
F. L. Smidth & Co.

PUMPS
American Paper Machy. & Engrg. Works, Inc.
Allis-Chalmers Mfg. Co.
Black Clawson Company
DeLaval Steam Turbine Co.
Dorr Company
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Gibbs-Brower Company, Inc.
Johnson Corp.
Moore & White Co.
Nash Engineering Co.
Roots Connersville Blower Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

RADIANT BURNERS
Red-Ray Mfg. Co., Inc.

RAG COOKING PROCESSES
The Kinsley Chemical Company
General Dyestuff Corp.
Rohm & Haas Co.

RAG CUTTERS
Gibbs-Brower Company, Inc.
B. F. Perkins & Son, Inc.
Taylor-Stiles & Co.

RECAUSTICIZING PLANTS
The Dorr Company

RECOVERY SYSTEMS
Babcock & Wilcox Co.
Chicago Bridge & Iron Co.
Rodney Hunt Machine Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Pusey & Jones Corp.
Ross Engineering Corp., J. O.
Valley Iron Works Co.

REELS
The Appleton Machine Co.
Black Clawson Company
Dilts Machine Works (Kohler Systems)
Downingtown Mfg. Co.
Hudson Sharp Machine Co.
Moore & White Co.
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
The Smith & Winchester Mfg. Co.

REFINERS
Appleton Machine Co.
Bahr Brothers Mfg. Co.
Bauer Brothers Co.
Dilts Machine Works
Gibbs-Brower Company, Inc.
Anton J. Haug
E. D. Jones & Sons Co.
Morden Machines Co.
Murray, D. J., Mfg. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Sutherland Refiner Corp.
Valley Iron Works

REGULATORS
American Paper Machy. & Engrg. Works, Inc.
Allis-Chalmers Mfg. Co.
Armstrong Machine Works
Bird Machine Company
DeZurik Shower Company
General Electric Co.
Johnson Corp.
Leeds & Northrup Company
National Technical Laboratories
Shartle Brothers Machine Co.
Stickle Steam Specialties Co.
Taylor Instrument Companies
Wallace & Tiernan

RESINS
American Cyanamid Company, Plastics & Resins Division
The Dow Chemical Company
The Goodyear Tire & Rubber Company
Hercules Powder Co
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co., Resinous Products Div.

ROLLS
Appleton Machine Co.
Black Clawson Company
Dilts Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell Co.
The Moore & White Co.
D. J. Murray Mfg. Co.
Perkins, B. F., & Sons Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Co.
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
U. S. Rubber Co.
Valley Iron Works Co.
Waldron Corp., John

ROLL COVERS
The Goodyear Tire & Rubber Company
Stowe-Woodward, Inc.

ROLL HANDLING EQUIPMENT
Dilts Machine Works (Kohler Systems)

ROLL STANDS
Cameron Machine Co.
Dilts Machine Works (Kohler Systems)
Frank W. Egan & Co.
Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
John Waldron Corp.
H. G. Weber & Co., Inc.

ROPE CARRIERS
Black Clawson Co.
The Moore & White Co.
The Sandy Hill Iron & Brass Works

ROTARY KILNS
F. L. Smidth & Co.

ROTARY STEAM JOINTS
Johnson Corp.
The Moore & White Co.
Shartle Bros. Mch. Co.

RUBBER PRODUCTS
The Goodyear Tire & Rubber Company

SATURATING MACHINES
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

SAVEALLS
Bird Machine Company
Chicago Bridge & Iron Co.
Green Bay Fdy. & Mch. Wks.
Hardinge Company

SCALES
Fairbanks, Morse & Co.
Merrick Scale Mfg. Co.
Testing Machines, Inc.

SCREEN PLATES
Bird Machine Company
Fitchburg Screen Plate Co.
Magnus Metal Corp.
Morey Paper Mill Supply Co.
Testing Machines, Inc.

SCREENS
Allis-Chalmers Mfg. Co.
Appleton Wire Works
Appleton Machine Company
Bird Machine Company
Carthage Machine Co.
Dilts Machine Works, Inc
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Green Bay Fdy. & Mch. Co.
E. D. Jones & Sons Co.
Link Belt Company

Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

SHEET MACHINES
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Valley Iron Works Co.

SHOWER PIPES
Bird Machine Company
DeZurik Shower Company
Downingtown Mfg. Co.
Moore & White Co.
Sandusky Fdy. & Mch. Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

SHREDDERS
Bauer Brothers Co.
Carthage Machine Co.
Gibbs-Brower Company, Inc.

SIZE PRESSES
Manchester Machine Co.

SIZING
American Cyanamid Company, Industrial Chemicals Division
The Dow Chemical Company
du Pont, E. I., de Nemours & Co.
Hercules Powder Co.
The Hubinger Co.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Stein-Hall Co., Inc.
Wyandotte Chemicals Corp., Michigan Alkali Div.

SIZING TESTER
W. & L. E. Gurley
Testing Machines, Inc.
Thwing-Albert Instrument Co.

SLIME CONTROL
The Dow Chemical Company
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.
Monsanto Chemical Co.
National Aluminate Corp.
Rohm & Haas Co.
Vanderbilt Co., R. T.
Wyandotte Chemicals Corp., Michigan Alkali Div.

SLITTERS
Black Clawson Company
Cameron Machine Co.
Carthage Machine Co.
Dietz Machine Works
Dilts Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co., Inc.
Hamblet Machine Co.
Hudson Sharp Machine Co.
Langston Co., Samuel M.
Moore & White Co.
D. J. Murray Mfg. Co.
Potdevin Machine Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

SMOKE STACKS
Chicago Bridge & Iron Co.

SOFTNESS-STIFFNESS TESTER
W. & L. E. Gurley
Testing Machines, Inc.
Thwing-Albert Instrument Co.

SOLUBLE OILS
American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Nopco Chemical Co.

SPECIAL MACHINERY
Dilts Machine Works
The Sandy Hill Iron & Brass Works
John Waldron Corp.

SPLICING TISSUE
Bunge Pulp & Paper Co.
Williams-Gray Co.

STAINLESS STEEL
Armco Steel Corp.
Michigan Steel Casting Co.
U. S. Steel Corp.

STARCH
A. M. Meincke & Son, Inc.
Clinton Foods, Inc.
The Hubinger Co.
National Starch Products Inc.
Stein-Hall Co., Inc.

STEAM JOINTS
The Moore & White Co.
Shartle Bros. Mch. Co.

STEAM SPECIALTIES
Babcock & Wilcox Co.
Combustion Engrg. Co., Inc.
Davis Engrg. Corp.
Johnson Corp.
Stickle Steam Specialties Co.

STEEL
Armco Steel Corp.
Carnegie Illinois Steel Co.
Lukens Steel Company
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
U. S. Steel Corp.

STEEL, CLAD
Babcock & Wilcox Co.
Lukens Steel Company

STEEL TANKS
Chicago Bridge & Iron Co.
The Sandy Hill Iron & Brass Works

STRETCH TESTER
Thwing-Albert Instrument Co.

STUFF CHESTS
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

SUCTION BOXES
Black Clawson Company
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

SULPHITE SPECIALTIES
Canadian Newsprint Supply Co.

SULPHUR
Texas Gulf Sulphur Co.

SULPHUR BURNERS
Valley Iron Works Co.

SULPHUR DIOXIDE
American Cyanamid Company, Calco Chemical Div.
Virginia Smelting Co.

SUPERCALENDERS
The Appleton Machine Co.
B. F. Perkins & Son, Inc.

SYNTHETIC LATICES
American Cyanamid Company Industrial Chemicals Division
The Goodyear Tire & Rubber Company
Nopco Chemical Co.

TAKE OFF UNITS
Dilts Machine Works (Kohler Systems)

TALC
American Cyanamid Company, Industrial Chemicals Division
Vanderbilt Co., R. T.

TANKS
Chicago Bridge & Iron Co.
Kalamazoo Tank & Silo Co.
B. F. Perkins & Sons, Inc.
J. O. Ross Engrg. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

TEARING TESTERS
Thwing-Albert Instrument Co.
Testing Machines, Inc.

TENSILE TESTERS
Bunge Pulp & Paper Co.
Thwing-Albert Instrument Co.
B. F. Perkins & Son, Inc.
Testing Machines, Inc.
Nopco Chemical Co.

THICKENERS, DECKERS AND SAVEALLS
The Appleton Machine Co.
Bird Machine Company
Carthage Machine Co.
Chicago Bridge & Iron Co.
Dilts Machine Works
Dorr Co.
Downingtown Mfg. Co.
Green Bay Fdy. & Mch. Co.
Hardinge Co., Inc.
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

TITANIUM
American Cyanamid Co., Calco Chemical Div.
E. I. du Pont de Nemours & Co.
Titanium Pigment Co.
R. T. Vanderbilt Co.

TOOLS
Walworth Company

TRACTORS AND TRUCKS
Towmotor Corp.

TRANSMISSIONS
Link Belt Company

TRAPS
Crane Co.
Johnson Corporation
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

TUBE MILLS
F. L. Smidth & Co.

TUBES
Babcock & Wilcox Co.
National Tube Co.

TUBING MACHINES
Dilts Machine Works

TUBING, MECHANICAL
National Tube Co.

TUBS
Rodney Hunt Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

TURBINES
Allis-Chalmers Mfg. Co.
De Laval Steam Turbine Co.
General Electric Company
Hunt, Rodney, Mach. Co.

UNWINDERS
Dilts Machine Works (Kohler Systems)
John Waldron Corp.

USED EQUIPMENT
Gibbs-Brower Co.
Thomas W. Hall Co.
J. J. Ross Company
Ross Paper Machy. Corp.
Shartle Brothers Machine Co.

VALVES
Crane Company
Dilts Machine Works
E. D. Jones & Sons Co.
Magnus Metal Corp.
D. J. Murray Mfg. Co.
William Powell Co.
Record Fdy. & Mch. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Stickle Steam Specialties Co.
Taylor Instrument Companies
Trimbey Mach. Wks.
Valley Iron Works Co.
Walworth Company

VORTRAPS
Nichols Engrg. & Research Corp.

WASHERS
Bird Machine Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Green Bay Fdy. & Mch. Co.
E. D. Jones & Sons Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Rodney Hunt Machine Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

WASTE TREATING, EQUIPMENT
The Dorr Company
Hungerford & Terry, Inc.

WATER CONDITIONING
Calgon, Inc.
The Dorr Company
General Dyestuff Corp.
Hungerford & Terry, Inc.
National Aluminate Corp.
The Permutit Company
The Sandy Hill Iron & Brass Works

WATER DISPERSIONS
American Cyanamid Company Industrial Chemicals Division
Rohm & Haas Co., Resinous Products Div.

WATER FILTERS
Green Bay Fdy. & Mch. Wks.
The Permutit Company

WATER FINISH EQUIPMENT
Dilts Machine Works

WATER PENETRATION TESTER
Thwing-Albert Instrument Co.

WATER SOFTENERS
The Dorr Company
Hungerford & Terry, Inc.
The Permutit Company
Wyandotte Chemicals Corp., Michigan Alkali Div.

WATER VAPOR CUPS
Thwing-Albert Instrument Co.

WAXES
Bunge Pulp & Paper Co.
National Wax Company

WAXING MACHINERY
Black Clawson Company
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Mayer Machine Co.
Potdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

WEB TENSION CONTROL
Dilts Machine Works (Kohler Systems)
John Waldron Corp.

WELDING EQUIPMENT
General Electric Company
Walworth Company

WET MACHINES
Black Clawson Company
Carthage Machine Co.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Pusey & Jones Company
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

WETTING AGENTS
American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.
Wallerstein Co., Inc.
Wyandotte Chemicals Corp., Michigan Alkali Div.

WHITE WATER HEATERS, AUTOMATIC SELF CLEANING TYPE
Davis Engineering Corp.

WHITE WATER TREATING EQUIPT.
The Dorr Company
Hungerford & Terry, Inc.
The Permutit Company
The Sandy Hill Iron & Brass Works

WINDERS AND REWINDERS
The Appleton Machine Co.
Black Clawson Company
Cameron Machine Co.
Dietz Machine Works
Dilts Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Mach. Co.
Kohler Systems
Langston Co., Samuel M.
Moore & White Co.
Potdevin Machine Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Waldron Corp., John

WINDING ROLL CHANGERS
Dilts Machine Works (Kohler Systems)

WIRE BRUSHES
M. W. Jenkins Sons, Inc.

WIRES
Appleton Wire Works
International Wire Works
Lindsay Wire Weaving Co.
Williams-Gray Co.

WIRE BRUSHES
Williams-Gray Co.

WOOD SPLITTERS
The Appleton Machine Co.
Carthage Machine Co.

INDEX TO ADVERTISERS

A

Alexander Brothers — —
Allis-Chalmers Mfg. Co. — 3
Amercoat Corporation — 38
American Cyanamid Co., Calco Chemicals Division — —
American Cyanamid Co., Industrial Chemicals Division — —
American Leather Belting Assn. — —
American Paper Mchy. & Engrg. Wks. — —
Appleton Machine Co., The — —
Appleton Wire Works, Inc. — —
Appleton Woolen Mills — 48
Armco Drainage & Metal Products, Inc. — —
Armco Steel Corp. — —
Askania Regulator Co. — —
Asten-Hill Mfg. Co. — —

B

Babcock & Wilcox Co. — —
Bagley & Sewall Company — —
Bahr Bros. Mfg. Co. — —
Bailey Meter Company — —
Bauer Brothers Co., The — —
Beckman Instruments, Inc. — —
Bird Machine Company — —
Birk, F. Paul — —
Braby, R. W., Inc. — 43
Black Clawson Company — 6
Blaw-Knox Company — —
Bowsher, N. P., Company — —
Bridgeport Safety Emery Wheel Co. — —
Brown Company — —
Bulkley, Dunton Pulp Co. — 29
Bunge Pulp & Paper Co. — —

C

Cambridge Instrument Co. — —
Cameron Machine Co. — —
Canadian Newsprint Supply Co. — —
Carthage Machine Co. — —
Chemipulp Process Inc. — —
Chicago Bridge & Iron Co. — —
Chiksan Company — —
Cibs Company — —
Classified Advertising — 43
Cleveland Crane & Engrg. Co. — —
Clinton Foods, Inc. — 47
Cochrane Corporation — —
Colledge, E. W. — —
Columbia Chem. — —
Combustion Engineering Superheater, Inc. — 8
Corn Products Sales Co. — —
Cowles Chemical Co. — —
Cowles Company, Inc. — 53
Crane Company — —
Crucible Steel Company of America — —
Curlator Corporation — —

D

Davis Engineering Corp. — —
Deitz Machine Works — —
De Laval Steam Turbine Co. — —
DeZurik Shower Co. — —
Dilts Machine Works — 6
Dorr Company, The — —
Dow Chemical Company — 20
Downingtown Mfg. Co. — 2
Draper Brothers Co. — —
duPont, E. I., de Nemours & Co., Electrochemical Dept. — —
duPont, E. I., de Nemours & Co., Dyestuffs Dept. — —
duPont, E. I., de Nemours & Co., Grasselli Chem. Dept. — —
duPont, E. I., de Nemours & Co., Pol chemicals Dept. — —
Durirron Company, The — —

E

Ebasco Services, Inc. — —
Efficiency Engrg. Co. — —
Egan, Frank & Company — —
Elixman Paper Core Co. — —
English China Clays Sales Corp. — —

F

Fairbanks Morse & Co. — —
Farrel-Birmingham Co., Inc. — —
Ferguson, The H. K., Company — 36
Ferro Enamel Corp. — —
Fitchburg Screen Plate Co. — —

G

Geigy Company — 48
General Dyestuff Corp. — —
General Electric Company — 16 & 17
Gibbs, Ralph E. — —
Gibbs-Brower Co. — 45
Goodrich Chemical Company — —
Goodrich Co., B. F. — —
Goodyear Tire & Rubber Co. — —
Goslin-Birmingham Mfg. Co. — —
Gotham Ink & Color Co. — —
Gottesman & Company — —
Green Bay Fdy. & Wks. — —
Grinnell Company, Inc. — —
Guest, C. M., & Sons — —
Gurley, W. & L. E. — —

H

Hagan Corp., (Calgon, Inc.) — —
Hall, Thomas W., Co., Inc. — 45
Hamblet Machine Co. — —
Hansson, Elof, Inc. — —
Hardinge Company, Inc. — —
Harris-Seybold Co. — —
Heppenstall Company — —
Hercules Powder Company — —
Heyden Chemical Co., Aktivin Div. — —
Hooker Electrochemical Co. — —
Huber, J. M., Corp. — —
Hubinger Company, The — —
Hudson Sharp Mfg. Co. — —
Hungerford & Terry, Inc. — 47
Huyck, F. C., & Sons — —

I

Industrial Brownhoist — —
International Nickel Co. — —
International Wire Works — 48

J

Jenkins, M. W., Sons, Inc. — —
Johnson Corporation, The — —
Johnson, Alvin H., & Co. — —
Jones, E. D., & Sons Co. — —

K

Kalamazoo Tank & Silo Co. — —
Kidder, Peabody & Co. — —
Kinsley Chemical Company — 48
Knox Woolen Company — —

L

Langston, Samuel M., Co. — 15
Lawton, C. A., Company — —
Leeds & Northrup Co. — —
Lindsay Wire Weaving Co. — —
Link Belt Company — —
Lobdell United Company — —
Lockport Felt Co. — Back Cover
Lodding Engineering Co. — —
Loeser, E. W., Company — —
Lukens Steel Company — —
Lyddon Company — 41
Lynch Corporation — —

M

Magnus Metal Div., Nat. Lead Co. — —
Main, Charles T., Inc. — 48
Manchester Machine Co. — —
McBride, Edward J., Company — —
Mead Sales Company, The — —
Meincke, A. M., & Son — —
Meisel Press Mfg. Co. — —
Merrick Scale Company — —
Michigan Steel Casting Co. — 48
Monsanto Chemical Company — —
Montague Machine Co. — —
Moore & Munger — —
Moore & White Co. — —
Moorhead Electrical Machinery Co. — —
Morden Machines Company — —
Morey Paper Mill Supply Co. — —
Morning, Nichol Inc. — —
Mount Hope Machinery Co. — 41
Murray, D. J., Mfg. Co. — —

N

Nash Engineering Company — 46
National Adhesives — —
National Aluminate Corp. — —
National Aniline Div., Allied Chem. & Dye Corp. — —
National Starch Products, Inc. — —
National Tube Co. — —
National Wax Company — —
Newport News Shipbuilding & Dry Dock Co. — —
Niagara Alkali Co. — —
Nichols Engrg. & Research Co. — —
Nopco Chemical Co. — —
Northern Engraving & Mch. Co. — —
Norton Company — —

O

O'Donoghue, Roderick — —

P

Paisley Products, Inc. — —
Paper & Industrial Appliances — —
Paper & Pulp Testing Laboratories — —
Parsons & Whittemore — 39
Perkins, B. F., & Son Co. — —
Perkins-Goodwin Company — —
Permutit Company, The — —
Photovolt Corporation — —
Pittsburgh Plate Glass Co. — —
Potdevin Machine Co. — 41
Powell, William, Company — —
Price & Pierce, Ltd. — 46
Pulp & Paper Trading Co. — —
Pusey & Jones Corp., The — —

R

Raymond, Chas. P., Service, Inc. — 43
Railway Supply & Mfg. Co. — 49
Record Fdy. & Machine Co. — —
Red Ray Manufacturing Co., Inc. — —
Reichhold Chemicals, Inc. — —
Reidel, Gus, & Son — —
Reliance Elec. & Engrg. Co. — —
Research Corporation — —
Restigouche Co., Ltd. — —
Rice Barton Research Corp. — —
Rogers, S. C., & Co. — —
Rohm & Haas Company — —
Roots-Connersville Blower Corp. — —
Ross, J. J., Company — —
Ross Paper Machinery Co. — 44
Rust Engineering Co. — —

S

Sandusky Fdy. & Mch. Co. — —
Sandy Hill Iron & Brass Works — —
Shartle Brothers Machine Co. — 6
Shuler & Benninghofen — —
Sinclair Refining Co. — —
Sirrine, J. E., Company — 48
Smidth, F. L., & Co. — —
Smith & Winchester Mfg. Co. — 37
Socony-Vacuum Oil Co., Inc. — —
Solvay Sales Div., Allied Chem. & Dye Corp. — —
Sonoco Products Company — —
Stebbins Engrg. & Mfg. Co. — —
Stein, Hall & Co., Inc. — —
Stickle Steam Specialties Co. — —
Sun Oil Company — —
Sutherland Refiner Corp. — —

T

Taylor Instrument Co.'s — —
Taylor Stiles & Co. — —
Testing Machines, Inc. — —
Texas Company, The — 4
Texas Gulf Sulphur Co., Inc. — —
Thomas Flexible Coupling Co. — —
Thwing-Albert Instrument Co. — —
Tide Water Assoc. Oil Co. — —
Timken Roller Bearing Co. — —
Tissue Converting Co. — 48
Titanium Pigment Corp. — —
Townotor Corporation — —

U

United Carbon Co., Inc. — —
U. S. Rubber Company — —
U. S. Steel Corp. — —

V

Valley Iron Works Co. — —
Vanderbilt, R. T., Co., Inc. — —
Virginia Smelting Company — —

W

Waldron, John, Corporation — —
Wallerstein Co., Inc. — —
Walworth Company — —
Waterbury Felt Co. — —
Waterbury, H., & Sons Co. — —
Weber, H. G., & Co., Inc. — —
Wellman Engineering Co. — —
Western Gear Works — —
Western Precipitation Corp. — 10
Westinghouse Electric Corp. — —
West Virginia Pulp & Paper Co. — 49
Weyerhaeuser Timber Co. — —
Wheeler Roll Company — —
Whiting Corporation — Front Cover
Williams Apparatus Co. — —
Williams Gray Company — —
Wyandotte Chemicals Corp. — —

BUSINESS STAFF

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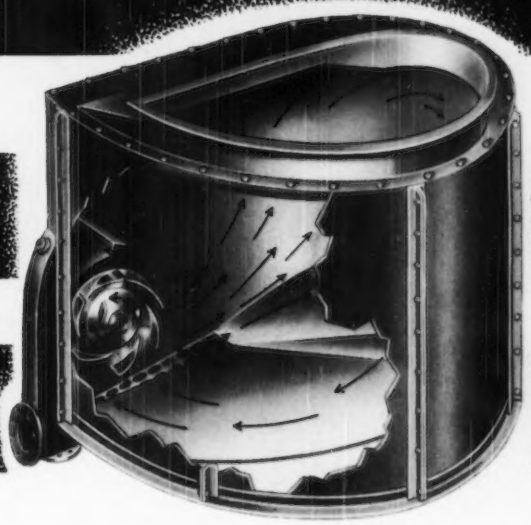

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